



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
Laboratory Services and Applied Science Division
980 College Station Road
Athens, Georgia 30605-2720

May 17, 2023

MEMORANDUM

SUBJECT: PFAS and VOC Analytical Sampling Results
Flash Cleaners
LSASD Project #: 23-0150

FROM: Paula A. Whiting, Environmental Engineer
Hazardous Waste Section
Field Services Branch

THRU: Kevin Simmons, Acting Supervisor
Hazardous Waste Section
Field Services Branch

TO: Craig VanTrees
Remedial Project Manager
Restoration and Site Evaluation Branch
Superfund and Emergency Management Division (SEMD)

Please find attached the PFAS and VOC sampling results for Flash Cleaners located in Pompano Beach, Florida. A total of 5 wells were sampled.

The Florida Department of Environmental Protection (FDEP) has calculated provisional GCTLs for PFOA and PFOS. The calculations were completed in accordance with Chapter 62-777, Florida Administrative Code (F.A.C.), equations and methodology. The provisional GCTLs for PFOA and PFOS concentrations are 70 nanograms per liter (ng/l), and 70 ng/l for the sum of PFOA and PFOS concentrations. The results revealed PFOA concentrations more than 70 ng/L at three locations (FCMW03, FCMW06, and FCMW23). In addition, volatile organics were detected above Regional Screening Levels at one location (FCMW06).

SEMD requested that the results be referenced against the Regional Screening Levels (RSL) Tapwater (Drinking Water) May 2023 THQ=0.1 instead of the RSL Maximum Contaminant Level (MCL) May 2023 THQ=0.1 which is used to compare the natural environment instead of industrial and/or residential. The results revealed PFOA concentrations exceeded the 0.04 µg/L at four locations (CCMW01-78, CCMW02, CCMW08 and CCMW12-65).

Additional information concerning the wells and the sampling are attached as: the Flash Cleaners Monitoring Well Information (**Table 1**), Flash Cleaners Data Summary – PFAS (**Table 2**), Flash Cleaners Data Summary – Volatile Organics (**Table 3**), Flash Cleaners Well Locations map (**Figure 1**), the

Sampling Calibration and Field Logbook (**Attachment 1**) which contain the monitoring well purge data and sampling notes, and the final PFAS and VOC Analytical Data Sheets (**Attachment 2**).

LSASD noted the following well conditions and recommendations needed to these wells based on field observations and logbook notes:

- Wells FCMW10 and FCMW23 need to have the organic material cleaned out of the bottom of the wells. The well cap was completely missing from FCMW10, and the initial purge cleaned out an ½ inch of black organic matter. In addition, the top of the casing for FCMW10 was flush with the well vault allowing rainwater and sediment to flow into the well.
- During the purging of Well FCMW10 and prior to its sampling, LSASD pulled the HDPE tubing from the well to conduct PFAS sampling and observed that 50+ feet of old teflon tubing was wrapped around the HDPE tubing. It seems that the old teflon tubing had dropped down into the well and was left by the previous samplers. LSASD uncoiled the old teflon tubing from the HDPE and re-purged the well for an additional 15 minutes. The pre-sample turbidity was noted at 9.61 NTU prior to the removal of the tubing, however, did not return below 10 NTU due to the removal of the teflon and HDPE tubing and the re-purging.
- All the wells need new well covers with bolts and new well caps that can be tightened to prevent rainwater and sediment from entering the wells.
- Currently none of the well covers are secured, and the bolt holes in the well covers allow rainwater and sediment to enter the wells. In addition, some of the bolt holes in the well casings are missing, which prevents the well covers from being bolted to the well casing.
- The coordinates for FCMW23 were updated. The previous samplers marked each well with its well number, so LSASD was able to correct identify each well. In EQUIS the coordinates given for this well were incorrect and LSASD used a Trimble GPS unit to accurately document the location of the well. This information is found in **Attachment 1**.

Per your recommendation, SEMD wishes to re-sample the Flash Cleaners wells after the above changes to the wells have been made. It was noted in the analytical results that the VOCs were higher than the last sampling event. Also, the PFAS analytical results may potentially have false positives due to the condition of the wells.

If you have any questions or comments, please contact me by phone at (706) 818-5926 or email at whiting.paula@epa.gov.

Attachments

cc: Cathy Amorosa, SEMD
Derek Matory, SEMD
Sandra Aker, LSASD

LSASD Project ID: 23-0150

Sampling Investigation Final Report

Florida Dry Cleaners

Location: **Flash Cleaners**
4131 North Federal Highway
Pompano Beach, Florida

Project Dates: **March 15, 2023**

Final SAP Approval Date: **May 17, 2023**

Project Leader: Paula A Whiting
Hazardous Waste Section
Field Services Branch
Laboratory Services & Applied Science Division
USEPA – Region 4
980 College Station Road
Athens, Georgia 30605-2720

The ANSI National Accreditation Board attests that U.S. EPA Region 4 Laboratory Services and Applied Science Division fulfills the requirements of ISO/IEC 17025:2017 ANAB Forensic Testing & Calibration AR 3125:2019 in the field of Forensic Testing. The activities contained in this report fall within the scope of accreditation, Certificate Number: AT-2628. Expires 08 June 2024.



Project Requestor:

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US Environmental Protection Agency - Region 4
980 College Station Road
Athens, Georgia 30605

Approvals:

LSASD Project Leader:

Paula A Whiting
Hazardous Waste Section
Field Services Branch

Date

Approving Official:

Kevin Simmons, Acting Supervisor
Hazardous Waste Section
Field Services Branch

Date

This Sampling and Analysis Plan (SAP) is designed to be used in conjunction with the *Applied Science Branch Quality Assurance Project Plan* December 2019.

Table 1: Flash Cleaners Monitoring Well Information

Well	Latitude	Longitude	Total Depth (feet bgs)	Well Diameter (inches)	Notes
FCMW03	26.28240623	-80.09693237	15	1	PFAS
FCMW06	26.28240002	-80.09668674	25	2	PFAS/VOC
FCMW07	26.28239869	-80.09666939	100	2	PFAS
FCMW10	26.28241860	-80.09666880	68	2	PFAS
FCMW23	26.2824139	-80.09669352	45	1	PFAS/VOC

Bgs below ground surface

Table 2: Flash Cleaners Data Summary – Volatile Organics

Data Summary - Volatile Organics			
SELECTED COMPARISON STANDARD: RSL MCL May 2022 THQ=0.1			
-	Station ID		FCMW06
-	Sample ID		FCMW06-0323
-	Matrix		Groundwater
-	Sample Date		3/15/2023 14:15
Analyte	Units	Comparison Standard	
Tetrachloroethene (Tetrachloroethylene)	µg/L	5 µg/L	410 J,O ^
Trichloroethene (Trichloroethylene)	µg/L	5 µg/L	360 J,O ^
Vinyl chloride	µg/L	2 µg/L	3100 J,O ^
cis-1,2-Dichloroethene	µg/L	70 µg/L	2400 J,O ^
trans-1,2-Dichloroethene	µg/L	100 µg/L	9.3 J,O

DATA QUALIFIER DEFINITIONS

- O Other qualifiers have been assigned providing additional information. These explanatory qualifiers are included in the printable pdf report and in other columns in the export files.
- U The analyte was not detected at or above the reporting limit.
- J The identification of the analyte is acceptable; the reported value is an estimate.
- ^ Denotes exceedance of Comparison Standard

Table 3: Flash Cleaners Data Summary – PFAS

Data Summary - PFAS								
SELECTED COMPARISON STANDARD: RSL Tapwater May 2023 THQ=0.1								
FDEP Provisional Groundwater Cleanup Target Level (PGCTL) for PFOA and PFOS								
(sum of PFOA and PFOS should be compared to the PGCTL) = 70 ng/L								
-	Station ID	-	FCMW03	FCMW06	FCMW06	FCMW07	FCMW10	FCMW23
-	Sample ID	-	FCMW03-0323	FCMW06-0323	FCMW06-0323	FCMW07-0323	FCMW10-0323	FCMW23-0323
-	Matrix	-	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
-	Sample Date	-	3/15/2023 13:15	3/15/2023 14:15	3/15/2023 14:15	3/15/2023 10:20	3/15/2023 12:20	3/15/2023 15:10
Analyte	Units	Comparison Standard						
FOSA	ng/L		3.6	< 10 U	< 10 U	< 9.9 U	< 10 U	< 9.9 U
N-MeFOSAA	ng/L		< 9.9 U	14 J,O	14 J,O	< 9.9 U	< 10 U	< 9.9 U
PFBA	ng/L		56	36	36	17 J,O	15 J,O	15 J,O
PFBS	ng/L	6 µg/L	31 J,O	9.4 J,O	9.4 J,O	< 8.8 U	9.1 J,O	31
PFHpA	ng/L		57	19 J,O	19 J,O	14	13	14
PFHpS	ng/L		17 J,O	< 19 U				
PFHxA	ng/L	9.9 µg/L	58	8.7 J,O	8.7 J,O	22 J,O	19 J,O	19 J,O
PFHxS	ng/L	0.39 µg/L	56	17	17	< 9.1 U	< 9.2 U	< 9.1 U
PFNA	ng/L	0.059 µg/L	17	16	16	< 9.9 U	< 10 U	45
PFOA	ng/L	0.06 µg/L	180 ^	24	24	18	15 J,O	19
PFOS	ng/L	0.04 µg/L	1600 J,O ^	1700 ^	1700 ^	15	21 J,O	56 ^
PFPeA	ng/L		180	32	32	33	27	27
PFPeS	ng/L		22	< 9.4 U	< 9.4 U	< 9.3 U	< 9.4 U	< 9.3 U

DATA QUALIFIER DEFINITIONS

O Other qualifiers have been assigned providing additional information. These explanatory qualifiers are included in the printable pdf report and in other columns in the export files.

U The analyte was not detected at or above the reporting limit.

J The identification of the analyte is acceptable; the reported value is an estimate.

^ denotes exceedance of Comparison Standard

Figure 1

Flash Cleaners Well Locations Map

**Figure 1
Flash Cleaners
Well Locations
March 2023**



FCMW03

FCMW23

FCMW10

FCMW06

FCMW07

NE 41st St

US 1 Federal Hwy

Vintage Dr



Attachment 1

Sampling Calibration and Field Logbook

United States Environmental Protection Agency
Region 4

Laboratory Services and Applied Science Division
980 College Station Road
Athens, Georgia 30605-2720



Florida Dry Cleaners

Continental Cleaners, Miami, FL
Flash Cleaners, Pompano Beach, FL
Sanford Cleaners, Sanford, FL

LSASD Project ID# 23-0149; 23-0150; 23-0151

Project Leader: Paula Whiting

Field Instrument Calibration Logbook

Book 1 of 1

Inclusive Dates: March 13⁻¹⁶, 2023

List of personnel:

Name/Affiliation	Initials
<u>Paula Whiting</u>	<u>PAW</u>
<u>Don Fortson</u>	
<u>Daniel McCay</u> <i>pmw</i> <i>2/13/23</i>	

Date 3/13/23

Instruments

Instrument Field #	LSASD ID #	pH	µS	°C	NTU	DO	ORP
1	020314-04	X	X	X			
2	092718-02 ^{OK 3/13/23}				X		
3	072816-03					X	X
4		X	X	X			
5					X		
6						X	X
7		X	X	X			
8					X		
9						X	X
10		X	X	X			
11					X		
12						X	X

Calibration Standards

Standard	Value	Manufacturer	Lot #	Expiration
pH	4	Fisher	215478	7/23
pH	7	Fisher	254	8/23
pH	10	Fisher	220003	1/24
Conductivity	1413 µS	^{OK 3/13/23} Drion Dakton	2203E57	3/23
Turbidity Standard Set #	10	HACH	A2095	7/23
	20	HACH	A2109	7/23
	100	HACH	A2101	7/23
Turbidity Standard Set #	10			
	20			
	100			
NIST Thermometer	-	Traceable	051721-04	3/1/24
NIST Thermometer	-			
ORP - Zobell Solution	-	YSI	22F100175	6/7/27
ORP - Zobell Solution	-			

Notes:

Stor Mor Buffer Set:
pH **Manufacturer**
 4
 7
 10

092718-02 would not power on.

Lot# **Expiration Date**

Calibration Date 3/13/23

Time 10:40

End Check Time 19:50

Instrument #	Parameter	Standard Value	Pre-Cal Reading	Calibration/ Verification	Post-Cal Reading	End of Day Check	Initials
1	pH	4	3.94	4.01	4.01	4.02	DF
1	pH	7	6.88	6.99	7.00	6.96	DF
1	pH	10	10.00	Slope 98.3%	10.03	10.00	DF
1	Spec Cond	1413 µS	1391	1413 µS	1410	1407	DF
1	Temp	NIST: 28.0 °C		Meter: 27.8 °C		NIST: 33.5 °C Meter: 32.9 °C	DF
2	Turbidity	0		0.20		0.12	DF
2	Turbidity	10		9.65		9.56	DF
2	Turbidity	20		20.0		19.7	DF
2	Turbidity	100		99.1		99.4	DF
3	DO	100	100.0	100	100.1	97.9	DF
3	ORP@ 29.7 °C	224.5	213.5	224.5	224.6	ORP STD: 219.3 Meter: 218.0	DF
4	pH	4					
4	pH	7					
4	pH	10					
4	Spec Cond	1413 µS		1413 µS			
4	Temp	NIST: °C		Meter: °C		NIST: °C Meter: °C	
5	Turbidity	0					
5	Turbidity	10					
5	Turbidity	20					
5	Turbidity	100					
6	DO	100		100			
6	ORP@ °C					ORP STD: Meter:	
7	pH	4					
7	pH	7					
7	pH	10					
7	Spec Cond	1413 µS		1413 µS			
7	Temp	NIST: °C		Meter: °C		NIST: °C Meter: °C	
8	Turbidity	0					
8	Turbidity	10					
8	Turbidity	20					
8	Turbidity	100					
9	DO	100		100			
9	ORP@ °C					ORP STD: Meter:	

External Temp 32.1 °C @ 10.5
29.3 °C 19.4 °C

Calibration Date 3-14-23

Time 0952

End Check Time 16:56

mbT
0952
30.8°C
mbT
16:56
26.5°C

Instrument #	Parameter	Standard Value	Pre-Cal Reading	Calibration/ Verification	Post-Cal Reading	End of Day Check	Initials
1	pH	4	3.97	4.01	4.02	3.95	DF
1	pH	7	6.96	7.00	7.01	6.89	DF
1	pH	10	10.04	Slope 983%	10.07	10.03	DF
1	Spec Cond	1413 µS	1417	1413 µS	1411	1412	DF
1	Temp	NIST: 25.8°C		Meter: 25.6°C		NIST: 28.7°C Meter: 28.5°C	DF
2	Turbidity	0		0.10		0.26	DF
2	Turbidity	10		9.67		9.61	DF
2	Turbidity	20		20.1		19.9	DF
2	Turbidity	100		100		99.6	DF
3	DO	100	98.5	100	100.1	100.6	DF
3	ORP@ 24.7°C	231	234	231	230.7	ORP STD: 228.4 Meter: 229.1	DF
4	pH	4					
4	pH	7					
4	pH	10					
4	Spec Cond	1413 µS		1413 µS			
4	Temp	NIST: °C		Meter: °C		NIST: °C Meter: °C	
5	Turbidity	0					
5	Turbidity	10					
5	Turbidity	20					
5	Turbidity	100					
6	DO	100		100			
6	ORP@ °C					ORP STD: Meter:	
7	pH	4					
7	pH	7					
7	pH	10					
7	Spec Cond	1413 µS		1413 µS			
7	Temp	NIST: °C		Meter: °C		NIST: °C Meter: °C	
8	Turbidity	0					
8	Turbidity	10					
8	Turbidity	20					
8	Turbidity	100					
9	DO	100		100			
9	ORP@ °C					ORP STD: Meter:	

Calibration Date 3-15-23

Time 09:02

End Check Time 16:47

Instrument #	Parameter	Standard Value	Pre-Cal Reading	Calibration/ Verification	Post-Cal Reading	End of Day Check	Initials
1	pH	4	3.99	4.01	4.02	3.98	XF
1	pH	7	6.97	7.00	7.01	6.96	DF
1	pH	10	10.14	Slope 98.6%	10.13	10.09	DF
1	Spec Cond	1413 µS	1424	1413 µS	1417	1416	DF
1	Temp	NIST: 23.5°C		Meter: 23.3°C		NIST: 25.8°C Meter: 25.5°C	DF
2	Turbidity	0		0.18		0.13	XF
2	Turbidity	10		9.62		9.53	DF
2	Turbidity	20		20.1		20.1	DF
2	Turbidity	100		99.2		99.7	DF
3	DO	100	99.2	100	100.3	100.2	DF
3	ORP@ 24.3°C	232.3	235.3	232.3	232.1	ORP STD: 232.3 Meter: 226.4	XF
4	pH	4					
4	pH	7					
4	pH	10					
4	Spec Cond	1413 µS		1413 µS			
4	Temp	NIST: °C		Meter: °C		NIST: °C Meter: °C	
5	Turbidity	0					
5	Turbidity	10					
5	Turbidity	20					
5	Turbidity	100					
6	DO	100		100			
6	ORP@ °C					ORP STD: Meter:	
7	pH	4					
7	pH	7					
7	pH	10					
7	Spec Cond	1413 µS		1413 µS			
7	Temp	NIST: °C		Meter: °C		NIST: °C Meter: °C	
8	Turbidity	0					
8	Turbidity	10					
8	Turbidity	20					
8	Turbidity	100					
9	DO	100		100			
9	ORP@ °C					ORP STD: Meter:	

Tamb @ 1402 235°
Tamb @ 1647 20.7

Calibration Date 3-16-23

Time 12:31

End Check Time 3-17-23 17:02 -DLM

Temp
12:31
40.9°C

Instrument #	Parameter	Standard Value	Pre-Cal Reading	Calibration/ Verification	Post-Cal Reading	End of Day Check	Initials
1	pH	4	4.02	4.02	4.00	4.03	DLM
1	pH	7	6.95	6.98	6.98	7.01	DLM
1	pH	10	10.04	Slope 98.8%	10.03	10.15	DLM
1	Spec Cond	1413 µS	1423	1413 µS	1403	1425	DLM
1	Temp	NIST: 29.7 °C		Meter: 29.6 °C		NIST: 22.5 °C Meter: 22.1 °C	DLM
2	Turbidity	0		0.17		0.27	DLM
2	Turbidity	10		9.50		9.41	DLM
2	Turbidity	20		19.8		19.6	DLM
2	Turbidity	100		99.8		99.1	DLM
3	DO	100	99.7	100	100.3	97.3	DLM
3	ORP@ 31.3 °C	223.2	208.2	223.2		ORP STD: 233.6 Meter: 247.2	DLM
4	pH	4					
4	pH	7					
4	pH	10					
4	Spec Cond	1413 µS		1413 µS			
4	Temp	NIST: °C		Meter: °C		NIST: °C Meter: °C	
5	Turbidity	0					
5	Turbidity	10					
5	Turbidity	20					
5	Turbidity	100					
6	DO	100		100			
6	ORP@ °C					ORP STD: Meter:	
7	pH	4					
7	pH	7					
7	pH	10					
7	Spec Cond	1413 µS		1413 µS			
7	Temp	NIST: °C		Meter: °C		NIST: °C Meter: °C	
8	Turbidity	0					
8	Turbidity	10					
8	Turbidity	20					
8	Turbidity	100					
9	DO	100		100			
9	ORP@ °C					ORP STD: Meter:	

Notes:

3/13/23

Turbidimeter SC
did not turn on. Changed the batteries and
the unit still did not turn. Placed red tag on
case handle

PAW

End of
Logbook

3/17/23

The following field procedures will be used unless otherwise stated in the field logbooks:

- SESDPROC-011-R5, Field Sampling Quality Control
- SESDPROC-100-R5, Field pH Measurement
- SESDPROC-101-R7, Field Specific Conductance Measurement
- SESDPROC-102-R5, Field Temperature Measurement
- SESDPROC-103-R4, Field Turbidity Measurement
- SESDPROC-105-R4, Groundwater Level and Well Depth Measurement
- SESDPROC-106-R4, Field Dissolved Oxygen Measurement
- SESDPROC-113-R2, Oxidation-Reduction Potential Measurement
- SESDPROC-202-R4, Management of Investigation Derived Waste
- SESDPROC-205-R4, Field Equipment Cleaning and Decontamination
- SESDPROC-209-R4, Packing, Marking, Labeling & Shipping of Environmental & Waste Samples
- SESDPROC-301-R4, Groundwater Sampling

Notes:

- Groundwater samples were not filtered.
- Groundwater samples were collected using the “tubing-in-screened-interval” method as described in SESDPROC-301-R4, Section 3.5 unless otherwise noted in this logbook.

Existing tubing used if present and in good condition, otherwise new tubing will be used.

- **GPS coordinates and analyses are listed in Table 1, see page 4**
- **Well construction information is listed in Table 1, see page 4.**
- **Site map is Figure 1, see page 5.**
- **Sample ID is Station ID plus “-0323”.**

Instrument calibration information is recorded in a separate instrument calibration logbook. Record instrument # (e.g. 1, 2, 3...) from the calibration logbook below:

<u>Dates Used</u>	<u>Conductivity/pH</u>	<u>DO/ORP</u>	<u>Turbidity</u>
3/15/23	1	2	3
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

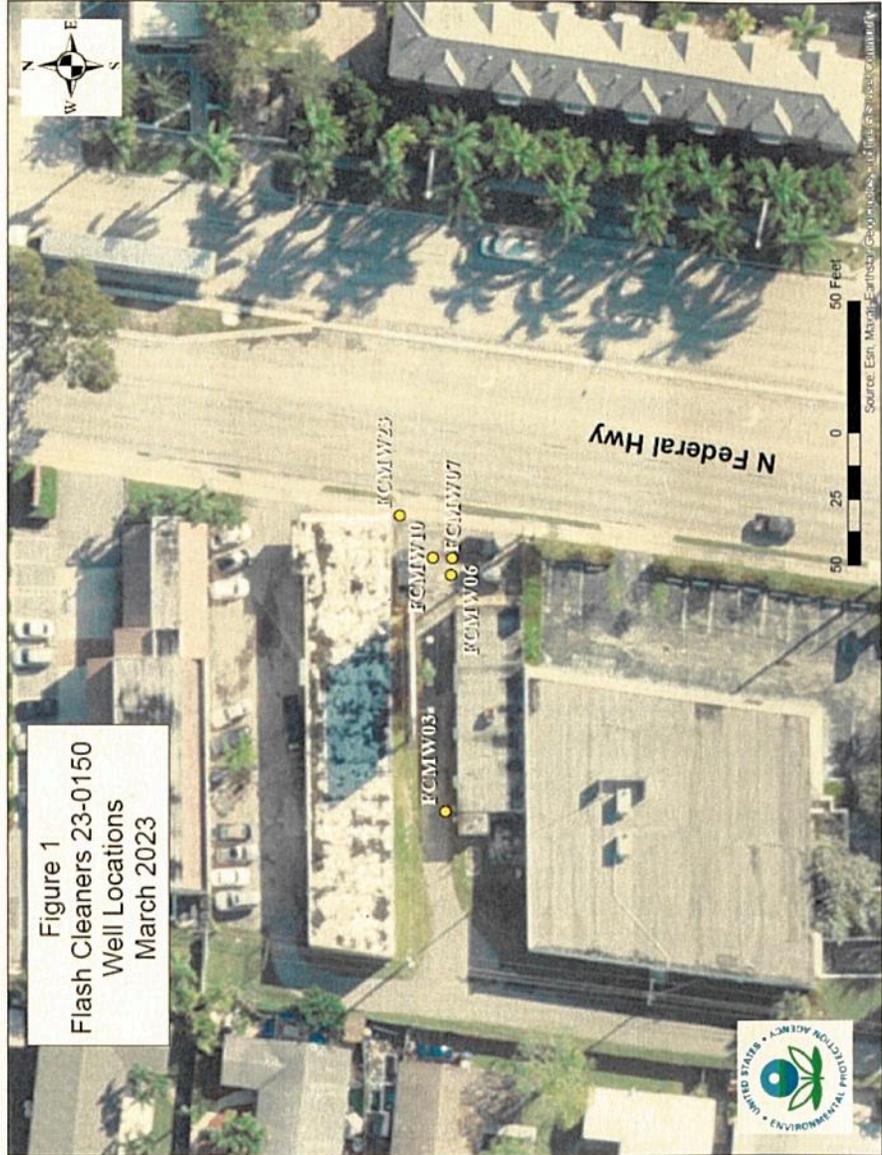
Notes:

Table 1 – Monitoring Well Information

Station ID	Latitude	Longitude	Well Depth (ft)	Screen Length (ft)	Screen Interval (ft bgs)	Well Diameter (in)	Analyses
FCMW03	26.28240623	-80.09693237	15	10	5-15	1	PFAS
FCMW06	26.28240002	-80.09668674	25	10	15-25	2	PFAS, VOC
FCMW07	26.28239869	-80.09666939	100	5	95-100	2	PFAS
FCMW10	26.28241860	-80.09666880	68	5	63-68	2	PFAS
FCMW23	26.28245300	-80.09662500	45	5	40-45	1	PFAS, VOC

ft bgs - Feet Below Ground Surface

Figure 1 – Monitoring Well Locations



Notes:

FC MW 23 - 26.28241389 N
- 80.09669352 W

VOA TBV010323 3/15/23 @ 1000

Date: 3/15/23 Station ID: FCMW07 Sample ID: FCMW07-0323

Team Members
D. Fortson
P. Whiting

Duties
Sampler, Instruments
Sampler, Logbook

Well Diameter (in) 2 Well screen length (ft) 5
 Well Depth (ft) 100 Tubing intake (ft above bottom) 2.5
 Water Level (ft) 6.4 Total well volume = 0.1632 gal/ft * Water Column _____
 Water Column (ft) 94.6 Purge Volume (gal) _____
 Purge Start Time 0945

amp slowed down

Time	Depth to Water	Cumulative Volume	pH (S.U.)	Temp (°C)	Spec Cond (µS/cm)	DO (mg/L)	ORP (mV)	NTU
0950	6.46	0.5	6.70	27.9	281.8	0.17	-80	2.36
0955	6.45	0.8	6.77	28.0	318.3	0.13	-110	1.58
1000	6.45	1.1	6.99	28.1	530.6	0.24	-110	1.98
1005	6.45	1.5	7.03	28.2	546.3	0.21	-100	1.57
1010	6.45	1.9	7.03	28.2	547.2	0.20	-100	0.88
1015	6.45	2.1	7.04	28.4	550.9	0.17	-90	0.73

Sample Collection Time 1020 MS/MSD? ||

Analyses	Container Type	Collected	Preservation	Samples Iced?
PFAS	15 ml vial - 2	<input checked="" type="checkbox"/>	Ice + HCl	<input checked="" type="checkbox"/>
VOCs	40 ml vial - 3	 	Ice + HCl	

If Duplicate Sample: _____
 Sample ID _____

PPW 3/15/23

Date/Time _____

All samples placed on ice/cooler checked for ice/water

Environmental conditions: Overcast, sunny, warm, breezy
cloudy
 Sample media description (odor, color, etc.): Clear liquid w/ black sediment, slight odor
yellow-orange color
 Procedure deviations/Comments/Notes: low flow sampling w/ peristaltic
well cap missing bolts

04179 TB
04183
04184

Date: 3/15/23 Station ID: FCMW10 Sample ID: FCMW10-0323

Team Members

D. Fortson
P. Whiting

Duties

Sampler
Sampler, Logbook

Well Diameter (in) 2
Well Depth (ft) 67.1
Water Level (ft) 6.7
Water Column (ft) 60.4

Well screen length (ft) 5
Tubing intake (ft above bottom) 2.5
Total well volume = 0.1632 gal/ft * Water Column _____
Purge Volume (gal) _____

Purge Start Time 1102/1154

slow down pump

~~PFAS~~
Repurge

Time	Depth to Water	Cumulative Volume	pH (S.U.)	Temp (°C)	Spec Cond (µS/cm)	DO (mg/L)	ORP (mV)	NTU
1112	7.26	1.0	7.29	27.9	287.1	0.60	-120	26.2
1117	6.85	1.6	7.17	28.0	390.1	0.13	-140	31.9
1122	6.76	2.0	7.17	28.0	418.6	0.15	-140	22.5
1127	6.71	2.4	7.16	28.0	428.3	0.12	-140	16.2
1133	6.71	2.8 ^{total 3.0}	7.17	28.0	446.3	0.16	-130	9.61
1155	6.84	0.5	7.16	28.1	412.9	0.20	-110	23.8
1200	6.78	0.7	7.18	28.0	434.8	0.13	-130	31.9
1205	6.79	1.1	7.17	28.0	443.0	0.05	-140	19.0
1210	6.74	1.6	7.19	27.9	446.3	0.21	-140	25.9

Sample Collection Time 1140 3/15/23 MS/MSD? 11

Analyses	Container Type	Collected	Preservation	Samples Iced?
PFAS	15 ml vial - 2	<input checked="" type="checkbox"/>	Ice + HCl	<input type="checkbox"/>
VOCs	40 ml vial - 3	<input type="checkbox"/>	Ice + HCl	<input type="checkbox"/>

If Duplicate Sample:

Sample ID _____

PFAS 3/15/23

Date/Time _____

When pulling out HDPE tubing for sampling PFAS, 50+ ft of teflon came up, coiled around the HDPE. All samples placed on ice/cooler checked for ice/water. Removed old teflon tubing dropped in well and added back HDPE to repurge @ 1154.

Environmental conditions:

Sunny, cloudy, warm, windy

04182
04185

Sample media description (odor, color, etc.):

Sulfur odor, clear liquid w/ black organic matter
tea color liquid

Procedure deviations/Comments/Notes:

low flow sampling w/ peristaltic pump
well cap was not on - initial purge had black organic matter
top of casing flush w/ well vault
had to clean out 1/2" organic matter

Date: 3/15/23 Station ID: FCMW03 Sample ID: FCMW03-0323

Team Members

D. Fortson
P. Whiting

Duties

Sampler
Sampler, Logbook

Well Diameter (in) 1
Well Depth (ft) 14.9
Water Level (ft) 7.31
Water Column (ft) 7.59

Well screen length (ft) 10
Tubing intake (ft above bottom) 5
Total well volume = 0.1632 gal/ft * Water Column _____
Purge Volume (gal) _____

Purge Start Time 1244

Time	Depth to Water	Cumulative Volume	pH (S.U.)	Temp (°C)	Spec Cond (µS/cm)	DO (mg/L)	ORP (mV)	NTU
1250	7.35	0.4	6.37	26.1	413.1	0.36	5	8.29
1255	7.35	0.6	6.39	26.1	431.3	0.21	-10	3.68
1300	7.35	1.0	6.43	25.9	439.1	0.39	-10	1.68
1305	7.35	1.25	6.42	26.0	446.8	0.42	-10	1.57

Sample Collection Time 1315 MS/MSD?

Analyses	Container Type	Collected	Preservation	Samples Iced?
PFAS	15 ml vial - 2	<input checked="" type="checkbox"/>	Ice + HCl	<input checked="" type="checkbox"/>
VOCs	40 ml vial - 3	<input type="checkbox"/>	Ice + HCl	<input type="checkbox"/>

If Duplicate Sample: _____
Sample ID _____

PAW
3/15/23

Date/Time _____

All samples placed on ice/cooler checked for ice/water

Environmental conditions:
Cloudy, windy, warm

Sample media description (odor, color, etc.):
clear liquid w/ reddish sediment

Procedure deviations/Comments/Notes:
low flow sampling w/ peristaltic pump

04177
04176 - ?
PAW 3/15/23

Date: 3/15/23 Station ID: FCMW06 Sample ID: FCMW06-0323

Team Members
D. Fortson
P. Whiting

Duties
Sampler, Instruments
Sampler, Logbook

Well Diameter (in) 2 ^{PAW} Well screen length (ft) 10
 Well Depth (ft) 25 (24.34) Tubing intake (ft above bottom) 5
 Water Level (ft) 6.65 Total well volume = 0.1632 gal/ft * Water Column _____
 Water Column (ft) 18.35 Purge Volume (gal) _____
 Purge Start Time 1351

Time	Depth to Water	Cumulative Volume	pH (S.U.)	Temp (°C)	Spec Cond (µS/cm)	DO (mg/L)	ORP (mV)	NTU
1355	6.92	0.4	5.80	28.4	508.7	0.35	-40	6.86
1400	6.93	0.6	5.80	28.4	509.3	0.25	-50	7.61
1405	6.93	1.2	5.82	28.6	513.6	0.15	-70	8.25

Sample Collection Time 1415 MS/MSD?

Analyses	Container Type	Collected	Preservation	Samples Iced?
PFAS	15 ml vial - 2	<input checked="" type="checkbox"/>	Ice + HCl	<input type="checkbox"/>
VOCs	40 ml vial - 3	<input checked="" type="checkbox"/>	Ice + HCl	<input type="checkbox"/>

If Duplicate Sample: _____
 Sample ID _____

Date/Time _____

All samples placed on ice/cooler checked for ice/water

Environmental conditions: Overcast, warm, windy 04174
04175

Sample media description (odor, color, etc.): clear liquid, chemical odor, black specks, yellowish tint

Procedure deviations/Comments/Notes: low flow sampling w/ peristaltic pump

Date: 3/15/23 Station ID: FCMW23 Sample ID: FCMW23-0323

Team Members

P Whiting
D. Fortson

Duties

Sampler, Logbook
Sampler, Instruments

Well Diameter (in) 2
Well Depth (ft) 44.24
Water Level (ft) 6.68
Water Column (ft) 37.56

Well screen length (ft) 5
Tubing intake (ft above bottom) 2.5
Total well volume = 0.1632 gal/ft * Water Column _____
Purge Volume (gal) _____

Purge Start Time 1442

Time	Depth to Water	Cumulative Volume	pH (S.U.)	Temp (°C)	Spec Cond (µS/cm)	DO (mg/L)	ORP (mV)	NTU
1447	6.71	0.5	6.61	27.8	738.9	0.11	-50	141
1452	6.71	0.9	6.62	27.8	731.1	0.09	-60	65.8
1457	6.71	1.4	6.61	27.8	732.9	0.06	-60	20.4
1502	6.71	1.6	6.60	27.7	734.5	0.08	-60	8.85

Sample Collection Time 1510 MS/MSD?

Analyses	Container Type	Collected	Preservation	Samples Iced?
PFAS	15 ml vial <u>24</u>	<input type="checkbox"/>	Ice + HCl	<input type="checkbox"/>
VOCs	40 ml vial <u>36</u>	<input type="checkbox"/>	Ice + HCl	<input type="checkbox"/>

If Duplicate Sample: Sample ID _____

Date/Time _____

All samples placed on ice/cooler checked for ice/water

Environmental conditions:
Overcast, droplets grain, windy 04173
04178
04180

Sample media description (odor, color, etc.):
Turbid liquid, with milky appearance 04181

Procedure deviations/Comments/Notes:
low flow sampling w/ peristaltic

Date: _____ Station ID: _____ Sample ID: _____

Team Members

Duties

Well Diameter (in) _____ Well screen length (ft) _____
 Well Depth (ft) _____ Tubing intake (ft above bottom) _____
 Water Level (ft) _____ Total well volume = 0.1632 gal/ft * Water Column _____
 Water Column (ft) _____ Purge Volume (gal) _____

Purge Start Time _____

Time	Depth to Water	Cumulative Volume	pH (S.U.)	Temp (°C)	Spec Cond (µS/cm)	DO (mg/L)	ORP (mV)	NTU

Handwritten: End of [unclear] 3/15/23

Sample Collection Time _____ MS/MSD?

Analyses	Container Type	Collected	Preservation	Samples Iced?
PFAS	15 ml vial - 2	<input type="checkbox"/> <input type="checkbox"/>	Ice + HCl	<input type="checkbox"/> <input type="checkbox"/>
VOCs	40 ml vial - 3	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Ice + HCl	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

If Duplicate Sample: _____
Sample ID _____

Date/Time _____
Handwritten: 3/15/23

All samples placed on ice/cooler checked for ice/water

Environmental conditions:

Sample media description (odor, color, etc.):

Procedure deviations/Comments/Notes:

Attachment 2

PFAS and VOC Analytical Data Sheets



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
 Region 4 Laboratory Services and Applied Science Division
 980 College Station Road, Athens, Georgia 30605-2700
 D.A.R.T. Id: 23-0150
 Project: 23-0150, Flash Cleaners - Reported by Floyd Wellborn

April 1, 2023

MEMORANDUM

SUBJECT: FINAL Analytical Report
 Project: 23-0150, Flash Cleaners

FROM: Floyd Wellborn
 LSB Organic Chemistry Section Chief

THRU: Stacie Masters, Chief
 Laboratory Services Branch

TO: Paula Whiting

Attached are the final results for the analytical groups listed below. This report shall not be reproduced except in full without approval of the Region 4 laboratory. These analyses were performed in accordance with the Laboratory Services Branch's Laboratory Operations and Quality Assurance Manual (LSB LOQAM) found at www.epa.gov/region4/sesd/asbsop. Any unique project data quality objectives specified in writing by the data requestor have also been incorporated into the data unless otherwise noted in the Report Narrative. Chemistry data have been verified based on the LSB LOQAM specifications and have been qualified by this laboratory if the applicable quality control criteria were not met. Verification is defined in Chapter 5 of the LSB LOQAM. For a listing of specific data qualifiers and explanations, please refer to the Data Qualifier Definitions included in this report. The reported results are accurate within the limits of the method(s) and are representative only of the samples as received by the laboratory.

Analyses Included in this report:	Method Used:	Accreditations:
Volatile Organics (VOA)		
Volatile organic compounds	EPA 8260C (Water)	ISO



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Sample Disposal Policy

Due to limited space for long term sample storage, LSB's policy is to dispose of samples on a periodic schedule. Air samples collected in summa canisters will be disposed of 30 days following the issuance of this report. All other sample media including original samples, sample extracts and or digestates will be disposed of, in accordance with applicable regulations, 60 days from the date of this report.

This sample disposal policy does not apply to criminal samples which are held until the laboratory is notified by the criminal investigators that case development and litigation are complete.

These samples may be held in the laboratory's custody for a longer period of time. If samples require storage beyond the 60-day period, please contact the Sample Control Coordinator by e-mail at R4SampleCustody@epa.gov.

cc: Nardina Turner



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Project: 23-0150, Flash Cleaners - Reported by Floyd Wellborn

SAMPLES INCLUDED IN THIS REPORT

Project: 23-0150, Flash Cleaners

Sample ID	Laboratory ID	Matrix	Date Collected	Date Received
TBV010323	E231202-02	Trip Blank - Water	3/15/23 10:20	3/20/23 8:30
FCMW06-0323	E231202-04	Groundwater	3/15/20 14:15	3/20/23 8:30
FCMW23-0323	E231202-07	Groundwater	3/15/23 15:10	3/20/23 8:30



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Project: 23-0150, Flash Cleaners - Reported by Floyd Wellborn

DATA QUALIFIER DEFINITIONS

U	The analyte was not detected at or above the reporting limit.
H-1	Recommended holding time exceeded
J	The identification of the analyte is acceptable; the reported value is an estimate.
Q-2	Result greater than MDL but less than MRL.
QS-3	Surrogate recovery is lower than established control limits.

ACRONYMS AND ABBREVIATIONS

CAS	Chemical Abstracts Service Note: Analytes with no known CAS identifiers have been assigned codes beginning with "E", the EPA ID as assigned by the EPA Substance Registry System (www.epa.gov/srs), or beginning with "R4-", a unique identifier assigned by the EPA Region 4 laboratory.
MDL	Method Detection Limit - The minimum concentration of a substance (an analyte) that can be measured and reported with a 99% confidence that the analyte concentration is greater than zero.
MRL	Minimum Reporting Limit - Analyte concentration that corresponds to the lowest demonstrated level of acceptable quantitation. The MRL is sample-specific and accounts for preparation weights and volumes, dilutions, and moisture content of soil/sediments.
TIC	Tentatively Identified Compound - An analyte identified based on a match with the instrument software's mass spectral library. A calibration standard has not been analyzed to confirm the compound's identification or the estimated concentration reported.

ACCREDITATIONS:

ISO	Accredited to ISO/IEC 17025:2017 and accreditation requirements for Forensic Science Testing Laboratories. Refer to the certificate and scope of accreditation FT-0330 at: http://www.epa.gov/aboutepa/about-region-4s-science-and-ecosystem-support-division-sesd
NR	Not accredited for this test.
DW	Accredited for conformance with ISO/IEC 17025:2017 and testing elements in the Fifth Edition of the Manual for the Certification of Laboratories Analyzing Drinking Water, EPA 815-R-05-004, 2005. Refer to the certificate and scope of accreditation AT-2628 at: http://www.epa.gov/aboutepa/about-region-4s-science-and-ecosystem-support-division-sesd
ISO/DW	Accredited to ISO/IEC 17025:2017 and accreditation requirements for Forensic Science Testing Labs, and conformance with ISO/IEC 17025:2017 and testing elements in the Manual for the Certification of Laboratories Analyzing Drinking Water.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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 D.A.R.T. Id: 23-0150
 Project: 23-0150, Flash Cleaners - Reported by Floyd Wellborn

Volatile Organics

Project: 23-0150, Flash Cleaners

Sample ID: TBV010323

Lab ID: E231202-02

Station ID:

Matrix: Trip Blank - Water

Date Collected: 3/15/23 10:20

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
R4-7156	(m- and/or p-)Xylene	1.0	U	ug/L	1.0	3/23/23 10:21	3/23/23 22:56	EPA 8260C
630-20-6	1,1,1,2-Tetrachloroethane	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 22:56	EPA 8260C
71-55-6	1,1,1-Trichloroethane	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 22:56	EPA 8260C
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 22:56	EPA 8260C
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 22:56	EPA 8260C
79-00-5	1,1,2-Trichloroethane	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 22:56	EPA 8260C
75-34-3	1,1-Dichloroethane	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 22:56	EPA 8260C
75-35-4	1,1-Dichloroethene (1,1-Dichloroethylene)	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 22:56	EPA 8260C
563-58-6	1,1-Dichloropropene	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 22:56	EPA 8260C
87-61-6	1,2,3-Trichlorobenzene	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 22:56	EPA 8260C
96-18-4	1,2,3-Trichloropropane	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 22:56	EPA 8260C
120-82-1	1,2,4-Trichlorobenzene	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 22:56	EPA 8260C
95-63-6	1,2,4-Trimethylbenzene	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 22:56	EPA 8260C
96-12-8	1,2-Dibromo-3-Chloropropane (DBCP)	1.0	U	ug/L	1.0	3/23/23 10:21	3/23/23 22:56	EPA 8260C
106-93-4	1,2-Dibromoethane (EDB)	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 22:56	EPA 8260C
95-50-1	1,2-Dichlorobenzene	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 22:56	EPA 8260C
107-06-2	1,2-Dichloroethane	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 22:56	EPA 8260C
78-87-5	1,2-Dichloropropane	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 22:56	EPA 8260C
108-67-8	1,3,5-Trimethylbenzene	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 22:56	EPA 8260C
541-73-1	1,3-Dichlorobenzene	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 22:56	EPA 8260C
142-28-9	1,3-Dichloropropane	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 22:56	EPA 8260C
106-46-7	1,4-Dichlorobenzene	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 22:56	EPA 8260C
594-20-7	2,2-Dichloropropane	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 22:56	EPA 8260C
67-64-1	Acetone	4.0	U	ug/L	4.0	3/23/23 10:21	3/23/23 22:56	EPA 8260C
71-43-2	Benzene	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 22:56	EPA 8260C
108-86-1	Bromobenzene	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 22:56	EPA 8260C
74-97-5	Bromochloromethane	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 22:56	EPA 8260C



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D.A.R.T. Id: 23-0150

Project: 23-0150, Flash Cleaners - Reported by Floyd Wellborn

Volatile Organics

Project: 23-0150, Flash Cleaners

Sample ID: TBV010323

Lab ID: E231202-02

Station ID:

Matrix: Trip Blank - Water

Date Collected: 3/15/23 10:20

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
75-27-4	Bromodichloromethane	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 22:56	EPA 8260C
75-25-2	Bromoform	1.0	U	ug/L	1.0	3/23/23 10:21	3/23/23 22:56	EPA 8260C
74-83-9	Bromomethane	2.0	U	ug/L	2.0	3/23/23 10:21	3/23/23 22:56	EPA 8260C
75-15-0	Carbon disulfide	2.0	U	ug/L	2.0	3/23/23 10:21	3/23/23 22:56	EPA 8260C
56-23-5	Carbon Tetrachloride	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 22:56	EPA 8260C
108-90-7	Chlorobenzene	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 22:56	EPA 8260C
75-00-3	Chloroethane	2.0	U	ug/L	2.0	3/23/23 10:21	3/23/23 22:56	EPA 8260C
67-66-3	Chloroform	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 22:56	EPA 8260C
74-87-3	Chloromethane	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 22:56	EPA 8260C
156-59-2	cis-1,2-Dichloroethene	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 22:56	EPA 8260C
10061-01-5	cis-1,3-Dichloropropene	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 22:56	EPA 8260C
110-82-7	Cyclohexane	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 22:56	EPA 8260C
124-48-1	Dibromochloromethane	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 22:56	EPA 8260C
74-95-3	Dibromomethane	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 22:56	EPA 8260C
75-71-8	Dichlorodifluoromethane (Freon 12)	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 22:56	EPA 8260C
100-41-4	Ethyl Benzene	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 22:56	EPA 8260C
87-68-3	Hexachlorobutadiene	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 22:56	EPA 8260C
98-82-8	Isopropylbenzene	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 22:56	EPA 8260C
79-20-9	Methyl Acetate	1.0	U	ug/L	1.0	3/23/23 10:21	3/23/23 22:56	EPA 8260C
591-78-6	Methyl Butyl Ketone	1.0	U	ug/L	1.0	3/23/23 10:21	3/23/23 22:56	EPA 8260C
78-93-3	Methyl Ethyl Ketone	4.0	U	ug/L	4.0	3/23/23 10:21	3/23/23 22:56	EPA 8260C
108-10-1	Methyl Isobutyl Ketone	1.0	U	ug/L	1.0	3/23/23 10:21	3/23/23 22:56	EPA 8260C
1634-04-4	Methyl T-Butyl Ether (MTBE)	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 22:56	EPA 8260C
108-87-2	Methylcyclohexane	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 22:56	EPA 8260C
75-09-2	Methylene Chloride	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 22:56	EPA 8260C
104-51-8	n-Butylbenzene	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 22:56	EPA 8260C
103-65-1	n-Propylbenzene	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 22:56	EPA 8260C
95-49-8	o-Chlorotoluene	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 22:56	EPA 8260C
95-47-6	o-Xylene	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 22:56	EPA 8260C



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Volatile Organics

Project: 23-0150, Flash Cleaners

Sample ID: TBV010323

Lab ID: E231202-02

Station ID:

Matrix: Trip Blank - Water

Date Collected: 3/15/23 10:20

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
106-43-4	p-Chlorotoluene	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 22:56	EPA 8260C
99-87-6	p-Isopropyltoluene	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 22:56	EPA 8260C
135-98-8	sec-Butylbenzene	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 22:56	EPA 8260C
100-42-5	Styrene	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 22:56	EPA 8260C
98-06-6	tert-Butylbenzene	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 22:56	EPA 8260C
127-18-4	Tetrachloroethene (Tetrachloroethylene)	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 22:56	EPA 8260C
108-88-3	Toluene	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 22:56	EPA 8260C
156-60-5	trans-1,2-Dichloroethene	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 22:56	EPA 8260C
10061-02-6	trans-1,3-Dichloropropene	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 22:56	EPA 8260C
79-01-6	Trichloroethene (Trichloroethylene)	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 22:56	EPA 8260C
75-69-4	Trichlorofluoromethane (Freon 11)	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 22:56	EPA 8260C
75-01-4	Vinyl chloride	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 22:56	EPA 8260C
Tentatively Identified Compounds:								
R4-0000	Tentatively Identified Compounds	10	U	ug/L	10	3/23/23 10:21	3/23/23 22:56	EPA 8260C



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region 4 Laboratory Services and Applied Science Division

980 College Station Road, Athens, Georgia 30605-2700

D.A.R.T. Id: 23-0150

Project: 23-0150, Flash Cleaners - Reported by Floyd Wellborn

Volatile Organics

Project: 23-0150, Flash Cleaners

Sample ID: FCMW06-0323

Lab ID: E231202-04

Station ID: FCMW06

Matrix: Groundwater

Date Collected: 3/15/20 14:15

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
R4-7156	(m- and/or p-)Xylene	50	U, J, H-1, QS-3	ug/L	50	3/23/23 10:21	3/24/23 3:32	EPA 8260C
630-20-6	1,1,1,2-Tetrachloroethane	25	U, J, H-1, QS-3	ug/L	25	3/23/23 10:21	3/24/23 3:32	EPA 8260C
71-55-6	1,1,1-Trichloroethane	25	U, J, H-1	ug/L	25	3/23/23 10:21	3/24/23 3:32	EPA 8260C
79-34-5	1,1,2,2-Tetrachloroethane	25	U, J, H-1	ug/L	25	3/23/23 10:21	3/24/23 3:32	EPA 8260C
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	25	U, J, H-1	ug/L	25	3/23/23 10:21	3/24/23 3:32	EPA 8260C
79-00-5	1,1,2-Trichloroethane	25	U, J, H-1, QS-3	ug/L	25	3/23/23 10:21	3/24/23 3:32	EPA 8260C
75-34-3	1,1-Dichloroethane	25	U, J, H-1	ug/L	25	3/23/23 10:21	3/24/23 3:32	EPA 8260C
75-35-4	1,1-Dichloroethene (1,1-Dichloroethylene)	25	U, J, H-1	ug/L	25	3/23/23 10:21	3/24/23 3:32	EPA 8260C
563-58-6	1,1-Dichloropropene	25	U, J, H-1	ug/L	25	3/23/23 10:21	3/24/23 3:32	EPA 8260C
87-61-6	1,2,3-Trichlorobenzene	25	U, J, H-1	ug/L	25	3/23/23 10:21	3/24/23 3:32	EPA 8260C
96-18-4	1,2,3-Trichloropropane	25	U, J, H-1	ug/L	25	3/23/23 10:21	3/24/23 3:32	EPA 8260C
120-82-1	1,2,4-Trichlorobenzene	25	U, J, H-1	ug/L	25	3/23/23 10:21	3/24/23 3:32	EPA 8260C
95-63-6	1,2,4-Trimethylbenzene	25	U, J, H-1	ug/L	25	3/23/23 10:21	3/24/23 3:32	EPA 8260C
96-12-8	1,2-Dibromo-3-Chloropropane (DBCP)	50	U, J, H-1	ug/L	50	3/23/23 10:21	3/24/23 3:32	EPA 8260C
106-93-4	1,2-Dibromoethane (EDB)	25	U, J, H-1, QS-3	ug/L	25	3/23/23 10:21	3/24/23 3:32	EPA 8260C
95-50-1	1,2-Dichlorobenzene	25	U, J, H-1	ug/L	25	3/23/23 10:21	3/24/23 3:32	EPA 8260C
107-06-2	1,2-Dichloroethane	25	U, J, H-1	ug/L	25	3/23/23 10:21	3/24/23 3:32	EPA 8260C
78-87-5	1,2-Dichloropropane	25	U, J, H-1	ug/L	25	3/23/23 10:21	3/24/23 3:32	EPA 8260C
108-67-8	1,3,5-Trimethylbenzene	25	U, J, H-1	ug/L	25	3/23/23 10:21	3/24/23 3:32	EPA 8260C
541-73-1	1,3-Dichlorobenzene	25	U, J, H-1	ug/L	25	3/23/23 10:21	3/24/23 3:32	EPA 8260C
142-28-9	1,3-Dichloropropane	25	U, J, H-1, QS-3	ug/L	25	3/23/23 10:21	3/24/23 3:32	EPA 8260C
106-46-7	1,4-Dichlorobenzene	25	U, J, H-1	ug/L	25	3/23/23 10:21	3/24/23 3:32	EPA 8260C
594-20-7	2,2-Dichloropropane	25	U, J, H-1	ug/L	25	3/23/23 10:21	3/24/23 3:32	EPA 8260C
67-64-1	Acetone	200	U, J, H-1	ug/L	200	3/23/23 10:21	3/24/23 3:32	EPA 8260C
71-43-2	Benzene	25	U, J, H-1	ug/L	25	3/23/23 10:21	3/24/23 3:32	EPA 8260C
108-86-1	Bromobenzene	25	U, J, H-1	ug/L	25	3/23/23 10:21	3/24/23 3:32	EPA 8260C
74-97-5	Bromochloromethane	25	U, J, H-1	ug/L	25	3/23/23 10:21	3/24/23 3:32	EPA 8260C



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
 Region 4 Laboratory Services and Applied Science Division
 980 College Station Road, Athens, Georgia 30605-2700
 D.A.R.T. Id: 23-0150
 Project: 23-0150, Flash Cleaners - Reported by Floyd Wellborn

Volatile Organics

Project: 23-0150, Flash Cleaners

Sample ID: FCMW06-0323

Lab ID: E231202-04

Station ID: FCMW06

Matrix: Groundwater

Date Collected: 3/15/20 14:15

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
75-27-4	Bromodichloromethane	25	U, J, H-1	ug/L	25	3/23/23 10:21	3/24/23 3:32	EPA 8260C
75-25-2	Bromoform	50	U, J, H-1	ug/L	50	3/23/23 10:21	3/24/23 3:32	EPA 8260C
74-83-9	Bromomethane	100	U, J, H-1	ug/L	100	3/23/23 10:21	3/24/23 3:32	EPA 8260C
75-15-0	Carbon disulfide	100	U, J, H-1	ug/L	100	3/23/23 10:21	3/24/23 3:32	EPA 8260C
56-23-5	Carbon Tetrachloride	25	U, J, H-1	ug/L	25	3/23/23 10:21	3/24/23 3:32	EPA 8260C
108-90-7	Chlorobenzene	25	U, J, H-1, QS-3	ug/L	25	3/23/23 10:21	3/24/23 3:32	EPA 8260C
75-00-3	Chloroethane	100	U, J, H-1	ug/L	100	3/23/23 10:21	3/24/23 3:32	EPA 8260C
67-66-3	Chloroform	25	U, J, H-1	ug/L	25	3/23/23 10:21	3/24/23 3:32	EPA 8260C
74-87-3	Chloromethane	25	U, J, H-1	ug/L	25	3/23/23 10:21	3/24/23 3:32	EPA 8260C
156-59-2	cis-1,2-Dichloroethene	2400	J, H-1	ug/L	25	3/23/23 10:21	3/24/23 3:32	EPA 8260C
10061-01-5	cis-1,3-Dichloropropene	25	U, J, H-1, QS-3	ug/L	25	3/23/23 10:21	3/24/23 3:32	EPA 8260C
110-82-7	Cyclohexane	25	U, J, H-1	ug/L	25	3/23/23 10:21	3/24/23 3:32	EPA 8260C
124-48-1	Dibromochloromethane	25	U, J, H-1, QS-3	ug/L	25	3/23/23 10:21	3/24/23 3:32	EPA 8260C
74-95-3	Dibromomethane	25	U, J, H-1	ug/L	25	3/23/23 10:21	3/24/23 3:32	EPA 8260C
75-71-8	Dichlorodifluoromethane (Freon 12)	25	U, J, H-1	ug/L	25	3/23/23 10:21	3/24/23 3:32	EPA 8260C
100-41-4	Ethyl Benzene	25	U, J, H-1, QS-3	ug/L	25	3/23/23 10:21	3/24/23 3:32	EPA 8260C
87-68-3	Hexachlorobutadiene	25	U, J, H-1	ug/L	25	3/23/23 10:21	3/24/23 3:32	EPA 8260C
98-82-8	Isopropylbenzene	25	U, J, H-1	ug/L	25	3/23/23 10:21	3/24/23 3:32	EPA 8260C
79-20-9	Methyl Acetate	50	U, J, H-1	ug/L	50	3/23/23 10:21	3/24/23 3:32	EPA 8260C
591-78-6	Methyl Butyl Ketone	50	U, J, H-1, QS-3	ug/L	50	3/23/23 10:21	3/24/23 3:32	EPA 8260C
78-93-3	Methyl Ethyl Ketone	200	U, J, H-1	ug/L	200	3/23/23 10:21	3/24/23 3:32	EPA 8260C
108-10-1	Methyl Isobutyl Ketone	50	U, J, H-1, QS-3	ug/L	50	3/23/23 10:21	3/24/23 3:32	EPA 8260C
1634-04-4	Methyl T-Butyl Ether (MTBE)	25	U, J, H-1	ug/L	25	3/23/23 10:21	3/24/23 3:32	EPA 8260C
108-87-2	Methylcyclohexane	25	U, J, H-1	ug/L	25	3/23/23 10:21	3/24/23 3:32	EPA 8260C
75-09-2	Methylene Chloride	25	U, J, H-1	ug/L	25	3/23/23 10:21	3/24/23 3:32	EPA 8260C
104-51-8	n-Butylbenzene	25	U, J, H-1	ug/L	25	3/23/23 10:21	3/24/23 3:32	EPA 8260C
103-65-1	n-Propylbenzene	25	U, J, H-1	ug/L	25	3/23/23 10:21	3/24/23 3:32	EPA 8260C
95-49-8	o-Chlorotoluene	25	U, J, H-1	ug/L	25	3/23/23 10:21	3/24/23 3:32	EPA 8260C
95-47-6	o-Xylene	25	U, J, H-1, QS-3	ug/L	25	3/23/23 10:21	3/24/23 3:32	EPA 8260C



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
 Region 4 Laboratory Services and Applied Science Division
 980 College Station Road, Athens, Georgia 30605-2700
 D.A.R.T. Id: 23-0150
 Project: 23-0150, Flash Cleaners - Reported by Floyd Wellborn

Volatile Organics

Project: 23-0150, Flash Cleaners

Sample ID: FCMW06-0323

Lab ID: E231202-04

Station ID: FCMW06

Matrix: Groundwater

Date Collected: 3/15/20 14:15

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
106-43-4	p-Chlorotoluene	25	U, J, H-1	ug/L	25	3/23/23 10:21	3/24/23 3:32	EPA 8260C
99-87-6	p-Isopropyltoluene	25	U, J, H-1	ug/L	25	3/23/23 10:21	3/24/23 3:32	EPA 8260C
135-98-8	sec-Butylbenzene	25	U, J, H-1	ug/L	25	3/23/23 10:21	3/24/23 3:32	EPA 8260C
100-42-5	Styrene	25	U, J, H-1, QS-3	ug/L	25	3/23/23 10:21	3/24/23 3:32	EPA 8260C
98-06-6	tert-Butylbenzene	25	U, J, H-1	ug/L	25	3/23/23 10:21	3/24/23 3:32	EPA 8260C
127-18-4	Tetrachloroethene (Tetrachloroethylene)	410	J, H-1, QS-3	ug/L	25	3/23/23 10:21	3/24/23 3:32	EPA 8260C
108-88-3	Toluene	25	U, J, H-1, QS-3	ug/L	25	3/23/23 10:21	3/24/23 3:32	EPA 8260C
156-60-5	trans-1,2-Dichloroethene	9.3	J, H-1, Q-2	ug/L	25	3/23/23 10:21	3/24/23 3:32	EPA 8260C
10061-02-6	trans-1,3-Dichloropropene	25	U, J, H-1, QS-3	ug/L	25	3/23/23 10:21	3/24/23 3:32	EPA 8260C
79-01-6	Trichloroethene (Trichloroethylene)	360	J, H-1	ug/L	25	3/23/23 10:21	3/24/23 3:32	EPA 8260C
75-69-4	Trichlorofluoromethane (Freon 11)	25	U, J, H-1	ug/L	25	3/23/23 10:21	3/24/23 3:32	EPA 8260C
75-01-4	Vinyl chloride	3100	J, H-1	ug/L	25	3/23/23 10:21	3/24/23 3:32	EPA 8260C
Tentatively Identified Compounds:								
R4-0000	Tentatively Identified Compounds	500	U, J, H-1	ug/L	500	3/23/23 10:21	3/24/23 3:32	EPA 8260C



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region 4 Laboratory Services and Applied Science Division

980 College Station Road, Athens, Georgia 30605-2700

D.A.R.T. Id: 23-0150

Project: 23-0150, Flash Cleaners - Reported by Floyd Wellborn

Volatile Organics

Project: 23-0150, Flash Cleaners

Sample ID: FCMW23-0323

Lab ID: E231202-07

Station ID: FCMW23

Matrix: Groundwater

Date Collected: 3/15/23 15:10

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
R4-7156	(m- and/or p-)Xylene	1.0	U	ug/L	1.0	3/23/23 10:21	3/23/23 23:46	EPA 8260C
630-20-6	1,1,1,2-Tetrachloroethane	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 23:46	EPA 8260C
71-55-6	1,1,1-Trichloroethane	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 23:46	EPA 8260C
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 23:46	EPA 8260C
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 23:46	EPA 8260C
79-00-5	1,1,2-Trichloroethane	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 23:46	EPA 8260C
75-34-3	1,1-Dichloroethane	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 23:46	EPA 8260C
75-35-4	1,1-Dichloroethene (1,1-Dichloroethylene)	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 23:46	EPA 8260C
563-58-6	1,1-Dichloropropene	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 23:46	EPA 8260C
87-61-6	1,2,3-Trichlorobenzene	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 23:46	EPA 8260C
96-18-4	1,2,3-Trichloropropane	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 23:46	EPA 8260C
120-82-1	1,2,4-Trichlorobenzene	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 23:46	EPA 8260C
95-63-6	1,2,4-Trimethylbenzene	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 23:46	EPA 8260C
96-12-8	1,2-Dibromo-3-Chloropropane (DBCP)	1.0	U	ug/L	1.0	3/23/23 10:21	3/23/23 23:46	EPA 8260C
106-93-4	1,2-Dibromoethane (EDB)	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 23:46	EPA 8260C
95-50-1	1,2-Dichlorobenzene	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 23:46	EPA 8260C
107-06-2	1,2-Dichloroethane	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 23:46	EPA 8260C
78-87-5	1,2-Dichloropropane	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 23:46	EPA 8260C
108-67-8	1,3,5-Trimethylbenzene	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 23:46	EPA 8260C
541-73-1	1,3-Dichlorobenzene	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 23:46	EPA 8260C
142-28-9	1,3-Dichloropropane	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 23:46	EPA 8260C
106-46-7	1,4-Dichlorobenzene	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 23:46	EPA 8260C
594-20-7	2,2-Dichloropropane	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 23:46	EPA 8260C
67-64-1	Acetone	4.0	U	ug/L	4.0	3/23/23 10:21	3/23/23 23:46	EPA 8260C
71-43-2	Benzene	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 23:46	EPA 8260C
108-86-1	Bromobenzene	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 23:46	EPA 8260C
74-97-5	Bromochloromethane	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 23:46	EPA 8260C



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region 4 Laboratory Services and Applied Science Division
 980 College Station Road, Athens, Georgia 30605-2700

D.A.R.T. Id: 23-0150

Project: 23-0150, Flash Cleaners - Reported by Floyd Wellborn

Volatile Organics

Project: 23-0150, Flash Cleaners

Sample ID: FCMW23-0323

Lab ID: E231202-07

Station ID: FCMW23

Matrix: Groundwater

Date Collected: 3/15/23 15:10

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
75-27-4	Bromodichloromethane	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 23:46	EPA 8260C
75-25-2	Bromoform	1.0	U	ug/L	1.0	3/23/23 10:21	3/23/23 23:46	EPA 8260C
74-83-9	Bromomethane	2.0	U	ug/L	2.0	3/23/23 10:21	3/23/23 23:46	EPA 8260C
75-15-0	Carbon disulfide	2.0	U	ug/L	2.0	3/23/23 10:21	3/23/23 23:46	EPA 8260C
56-23-5	Carbon Tetrachloride	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 23:46	EPA 8260C
108-90-7	Chlorobenzene	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 23:46	EPA 8260C
75-00-3	Chloroethane	2.0	U	ug/L	2.0	3/23/23 10:21	3/23/23 23:46	EPA 8260C
67-66-3	Chloroform	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 23:46	EPA 8260C
74-87-3	Chloromethane	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 23:46	EPA 8260C
156-59-2	cis-1,2-Dichloroethene	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 23:46	EPA 8260C
10061-01-5	cis-1,3-Dichloropropene	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 23:46	EPA 8260C
110-82-7	Cyclohexane	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 23:46	EPA 8260C
124-48-1	Dibromochloromethane	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 23:46	EPA 8260C
74-95-3	Dibromomethane	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 23:46	EPA 8260C
75-71-8	Dichlorodifluoromethane (Freon 12)	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 23:46	EPA 8260C
100-41-4	Ethyl Benzene	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 23:46	EPA 8260C
87-68-3	Hexachlorobutadiene	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 23:46	EPA 8260C
98-82-8	Isopropylbenzene	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 23:46	EPA 8260C
79-20-9	Methyl Acetate	1.0	U	ug/L	1.0	3/23/23 10:21	3/23/23 23:46	EPA 8260C
591-78-6	Methyl Butyl Ketone	1.0	U	ug/L	1.0	3/23/23 10:21	3/23/23 23:46	EPA 8260C
78-93-3	Methyl Ethyl Ketone	4.0	U	ug/L	4.0	3/23/23 10:21	3/23/23 23:46	EPA 8260C
108-10-1	Methyl Isobutyl Ketone	1.0	U	ug/L	1.0	3/23/23 10:21	3/23/23 23:46	EPA 8260C
1634-04-4	Methyl T-Butyl Ether (MTBE)	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 23:46	EPA 8260C
108-87-2	Methylcyclohexane	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 23:46	EPA 8260C
75-09-2	Methylene Chloride	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 23:46	EPA 8260C
104-51-8	n-Butylbenzene	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 23:46	EPA 8260C
103-65-1	n-Propylbenzene	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 23:46	EPA 8260C
95-49-8	o-Chlorotoluene	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 23:46	EPA 8260C
95-47-6	o-Xylene	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 23:46	EPA 8260C



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 Region 4 Laboratory Services and Applied Science Division
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 D.A.R.T. Id: 23-0150
 Project: 23-0150, Flash Cleaners - Reported by Floyd Wellborn

Volatile Organics

Project: 23-0150, Flash Cleaners

Sample ID: FCMW23-0323

Lab ID: E231202-07

Station ID: FCMW23

Matrix: Groundwater

Date Collected: 3/15/23 15:10

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
106-43-4	p-Chlorotoluene	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 23:46	EPA 8260C
99-87-6	p-Isopropyltoluene	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 23:46	EPA 8260C
135-98-8	sec-Butylbenzene	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 23:46	EPA 8260C
100-42-5	Styrene	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 23:46	EPA 8260C
98-06-6	tert-Butylbenzene	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 23:46	EPA 8260C
127-18-4	Tetrachloroethene (Tetrachloroethylene)	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 23:46	EPA 8260C
108-88-3	Toluene	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 23:46	EPA 8260C
156-60-5	trans-1,2-Dichloroethene	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 23:46	EPA 8260C
10061-02-6	trans-1,3-Dichloropropene	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 23:46	EPA 8260C
79-01-6	Trichloroethene (Trichloroethylene)	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 23:46	EPA 8260C
75-69-4	Trichlorofluoromethane (Freon 11)	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 23:46	EPA 8260C
75-01-4	Vinyl chloride	0.50	U	ug/L	0.50	3/23/23 10:21	3/23/23 23:46	EPA 8260C
Tentatively Identified Compounds:								
R4-0000	Tentatively Identified Compounds	10	U	ug/L	10	3/23/23 10:21	3/23/23 23:46	EPA 8260C



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Volatile Organics (VOA) - Quality Control
US-EPA, Region 4, LSASD

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2303043 - V 5030B VOA Wtr Prep

Blank (2303043-BLK1)

Prepared & Analyzed: 03/23/23

EPA 8260C

(m- and/or p-)Xylene	U	1.0	ug/L							U
1,1,1,2-Tetrachloroethane	U	0.50	"							U
1,1,1-Trichloroethane	U	0.50	"							U
1,1,1,2-Tetrachloroethane	U	0.50	"							U
1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	U	0.50	"							U
1,1,2-Trichloroethane	U	0.50	"							U
1,1-Dichloroethane	U	0.50	"							U
1,1-Dichloroethene (1,1-Dichloroethylene)	U	0.50	"							U
1,1-Dichloropropene	U	0.50	"							U
1,2,3-Trichlorobenzene	U	0.50	"							U
1,2,3-Trichloropropane	U	0.50	"							U
1,2,4-Trichlorobenzene	U	0.50	"							U
1,2,4-Trimethylbenzene	U	0.50	"							U
1,2-Dibromo-3-Chloropropane (DBCP)	U	1.0	"							U
1,2-Dibromoethane (EDB)	U	0.50	"							U
1,2-Dichlorobenzene	U	0.50	"							U
1,2-Dichloroethane	U	0.50	"							U
1,2-Dichloropropane	U	0.50	"							U
1,3,5-Trimethylbenzene	U	0.50	"							U
1,3-Dichlorobenzene	U	0.50	"							U
1,3-Dichloropropane	U	0.50	"							U
1,4-Dichlorobenzene	U	0.50	"							U
2,2-Dichloropropane	U	0.50	"							U
Acetone	U	4.0	"							U
Benzene	U	0.50	"							U
Bromobenzene	U	0.50	"							U
Bromochloromethane	U	0.50	"							U
Bromodichloromethane	U	0.50	"							U
Bromoform	U	1.0	"							U
Bromomethane	U	2.0	"							U
Carbon disulfide	U	2.0	"							U
Carbon Tetrachloride	U	0.50	"							U
Chlorobenzene	U	0.50	"							U
Chloroethane	U	2.0	"							U
Chloroform	U	0.50	"							U
Chloromethane	U	0.50	"							U
cis-1,2-Dichloroethene	U	0.50	"							U
cis-1,3-Dichloropropene	U	0.50	"							U



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Volatile Organics (VOA) - Quality Control
US-EPA, Region 4, LSASD

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2303043 - V 5030B VOA Wtr Prep

Blank (2303043-BLK1)

Prepared & Analyzed: 03/23/23

Cyclohexane	U	0.50	ug/L							U
Dibromochloromethane	U	0.50	"							U
Dibromomethane	U	0.50	"							U
Dichlorodifluoromethane (Freon 12)	U	0.50	"							U
Ethyl Benzene	U	0.50	"							U
Hexachlorobutadiene	U	0.50	"							U
Isopropylbenzene	U	0.50	"							U
Methyl Acetate	U	1.0	"							U
Methyl Butyl Ketone	U	1.0	"							U
Methyl Ethyl Ketone	U	4.0	"							U
Methyl Isobutyl Ketone	U	1.0	"							U
Methyl T-Butyl Ether (MTBE)	U	0.50	"							U
Methylcyclohexane	U	0.50	"							U
Methylene Chloride	U	0.50	"							U
n-Butylbenzene	U	0.50	"							U
n-Propylbenzene	U	0.50	"							U
o-Chlorotoluene	U	0.50	"							U
o-Xylene	U	0.50	"							U
p-Chlorotoluene	U	0.50	"							U
p-Isopropyltoluene	U	0.50	"							U
sec-Butylbenzene	U	0.50	"							U
Styrene	U	0.50	"							U
tert-Butylbenzene	U	0.50	"							U
Tetrachloroethene (Tetrachloroethylene)	U	0.50	"							U
Toluene	U	0.50	"							U
trans-1,2-Dichloroethene	U	0.50	"							U
trans-1,3-Dichloropropene	U	0.50	"							U
Trichloroethene (Trichloroethylene)	U	0.50	"							U
Trichlorofluoromethane (Freon 11)	U	0.50	"							U
Vinyl chloride	U	0.50	"							U
Tentatively Identified Compounds	U	10	"							U



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Volatile Organics (VOA) - Quality Control
US-EPA, Region 4, LSASD

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2303043 - V 5030B VOA Wtr Prep

LCS (2303043-BS1)

Prepared & Analyzed: 03/23/23

EPA 8260C

(m- and/or p-)Xylene	37.340		ug/L	40.000		93.3	91.3-117			
1,1,1,2-Tetrachloroethane	18.613		"	20.000		93.1	76.5-128			
1,1,1-Trichloroethane	20.809		"	20.000		104	79.3-126			
1,1,2,2-Tetrachloroethane	18.057		"	20.000		90.3	80.2-118			
1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	22.059		"	20.000		110	80-124			
1,1,2-Trichloroethane	18.550		"	20.000		92.8	87.1-111			
1,1-Dichloroethane	21.810		"	20.000		109	87.8-113			
1,1-Dichloroethene (1,1-Dichloroethylene)	22.239		"	20.000		111	85.4-116			
1,1-Dichloropropene	22.249		"	20.000		111	89.4-115			
1,2,3-Trichlorobenzene	18.538		"	20.000		92.7	85-117			
1,2,3-Trichloropropane	17.249		"	20.000		86.2	83.4-114			
1,2,4-Trichlorobenzene	18.184		"	20.000		90.9	83.9-117			
1,2,4-Trimethylbenzene	19.002		"	20.000		95.0	86.5-121			
1,2-Dibromo-3-Chloropropane (DBCP)	35.392		"	40.000		88.5	72.3-136			
1,2-Dibromoethane (EDB)	18.656		"	20.000		93.3	87.3-115			
1,2-Dichlorobenzene	18.270		"	20.000		91.4	86.4-111			
1,2-Dichloroethane	21.496		"	20.000		107	83.9-122			
1,2-Dichloropropane	22.152		"	20.000		111	88-113			
1,3,5-Trimethylbenzene	18.849		"	20.000		94.2	86.8-119			
1,3-Dichlorobenzene	18.326		"	20.000		91.6	86.4-112			
1,3-Dichloropropane	18.685		"	20.000		93.4	87.4-113			
1,4-Dichlorobenzene	18.072		"	20.000		90.4	86.5-110			
2,2-Dichloropropane	19.185		"	20.000		95.9	53.4-154			
Acetone	40.076		"	40.000		100	49.7-153			
Benzene	21.623		"	20.000		108	89.6-113			
Bromobenzene	17.763		"	20.000		88.8	84.6-112			
Bromochloromethane	22.255		"	20.000		111	83.6-117			
Bromodichloromethane	21.813		"	20.000		109	80-125			
Bromoform	34.876		"	40.000		87.2	63.1-142			
Bromomethane	21.470		"	20.000		107	49.9-140			
Carbon disulfide	22.245		"	20.000		111	81.7-114			
Carbon Tetrachloride	21.126		"	20.000		106	68.8-140			
Chlorobenzene	19.309		"	20.000		96.5	88.4-109			
Chloroethane	21.526		"	20.000		108	76.7-118			
Chloroform	22.028		"	20.000		110	87.9-115			
Chloromethane	21.847		"	20.000		109	68.9-118			
cis-1,2-Dichloroethene	21.936		"	20.000		110	87.6-115			
cis-1,3-Dichloropropene	19.325		"	20.000		96.6	81-121			



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Volatile Organics (VOA) - Quality Control
US-EPA, Region 4, LSASD

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2303043 - V 5030B VOA Wtr Prep

LCS (2303043-BS1)	Prepared & Analyzed: 03/23/23									
Cyclohexane	22.745		ug/L	20.000		114	83.5-122			
Dibromochloromethane	18.834		"	20.000		94.2	71.7-133			
Dibromomethane	22.066		"	20.000		110	87.3-117			
Dichlorodifluoromethane (Freon 12)	22.913		"	20.000		115	63.5-132			
Ethyl Benzene	19.257		"	20.000		96.3	90-114			
Hexachlorobutadiene	17.888		"	20.000		89.4	80.2-116			
Isopropylbenzene	18.291		"	20.000		91.5	84.5-120			
Methyl Acetate	42.035		"	40.000		105	75.8-121			
Methyl Butyl Ketone	36.920		"	40.000		92.3	69.9-136			
Methyl Ethyl Ketone	41.204		"	40.000		103	68.1-135			
Methyl Isobutyl Ketone	37.609		"	40.000		94.0	77-127			
Methyl T-Butyl Ether (MTBE)	21.708		"	20.000		109	80.1-123			
Methylcyclohexane	22.608		"	20.000		113	82.6-124			
Methylene Chloride	22.472		"	20.000		112	81.2-118			
n-Butylbenzene	18.926		"	20.000		94.6	85.7-121			
n-Propylbenzene	18.562		"	20.000		92.8	87-117			
o-Chlorotoluene	18.304		"	20.000		91.5	85.8-114			
o-Xylene	18.720		"	20.000		93.6	88.9-116			
p-Chlorotoluene	18.813		"	20.000		94.1	86.5-114			
p-Isopropyltoluene	19.357		"	20.000		96.8	86.3-123			
sec-Butylbenzene	19.086		"	20.000		95.4	86.2-120			
Styrene	19.376		"	20.000		96.9	89.9-119			
tert-Butylbenzene	18.459		"	20.000		92.3	85.2-119			
Tetrachloroethene (Tetrachloroethylene)	18.822		"	20.000		94.1	85.1-113			
Toluene	19.384		"	20.000		96.9	87.7-111			
trans-1,2-Dichloroethene	22.224		"	20.000		111	86.6-114			
trans-1,3-Dichloropropene	18.976		"	20.000		94.9	77.4-127			
Trichloroethene (Trichloroethylene)	21.670		"	20.000		108	87.8-114			
Trichlorofluoromethane (Freon 11)	22.089		"	20.000		110	78-129			
Vinyl chloride	22.081		"	20.000		110	78.8-115			



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Volatile Organics (VOA) - Quality Control
US-EPA, Region 4, LSASD

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2303043 - V 5030B VOA Wtr Prep

Matrix Spike (2303043-MS1)

Source: E231203-05

Prepared: 03/23/23 Analyzed: 03/24/23

EPA 8260C

(m- and/or p-)Xylene	18.291		ug/L	20.465	0.090000	88.9	81.5-138			
1,1,1,2-Tetrachloroethane	8.6287		"	10.233	0.0000	84.3	77.4-127			
1,1,1-Trichloroethane	11.766		"	10.233	0.0000	115	85.6-137			
1,1,2,2-Tetrachloroethane	7.2857		"	10.233	0.0000	71.2	78-121			QM-1
1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	13.581		"	10.233	0.0000	133	87.8-141			
1,1,2-Trichloroethane	8.7840		"	10.233	0.0000	85.8	83.6-119			
1,1-Dichloroethane	12.607		"	10.233	0.25270	121	87.6-126			
1,1-Dichloroethene (1,1-Dichloroethylene)	13.169		"	10.233	0.16600	127	87.5-133			
1,1-Dichloropropene	12.798		"	10.233	0.0000	125	90.2-132			
1,2,3-Trichlorobenzene	7.9257		"	10.233	0.0000	77.5	69.5-126			
1,2,3-Trichloropropane	7.2641		"	10.233	0.0000	71.0	78.9-120			QM-1
1,2,4-Trichlorobenzene	7.8004		"	10.233	0.0000	76.2	67.6-125			
1,2,4-Trimethylbenzene	8.3520		"	10.233	0.0000	81.6	57.5-147			
1,2-Dibromo-3-Chloropropane (DBCP)	14.590		"	20.465	0.0000	71.3	68.3-125			
1,2-Dibromoethane (EDB)	8.8571		"	10.233	0.0000	86.6	83.4-119			
1,2-Dichlorobenzene	7.8433		"	10.233	0.0000	76.6	78.4-125			QM-1
1,2-Dichloroethane	12.311		"	10.233	0.0000	120	83.5-129			
1,2-Dichloropropane	12.364		"	10.233	0.0000	121	85.3-125			
1,3,5-Trimethylbenzene	8.4224		"	10.233	0.0000	82.3	61.9-143			
1,3-Dichlorobenzene	7.8422		"	10.233	0.0000	76.6	79-125			QM-1
1,3-Dichloropropane	8.9505		"	10.233	0.0000	87.5	83.6-121			
1,4-Dichlorobenzene	7.9607		"	10.233	0.056400	77.2	78.3-124			QM-1
2,2-Dichloropropane	10.786		"	10.233	0.0000	105	45.4-163			
Acetone	22.490		"	20.465	1.5490	102	48.2-133			
Benzene	11.742		"	10.233	0.053700	114	88.8-127			
Bromobenzene	8.0100		"	10.233	0.0000	78.3	80.5-121			QM-1
Bromochloromethane	11.722		"	10.233	0.0000	115	82.7-126			
Bromodichloromethane	13.704		"	10.233	0.0000	134	81.1-125			QM-2
Bromoform	13.652		"	20.465	0.0000	66.7	50.7-133			
Bromomethane	12.141		"	10.233	0.0000	119	33.6-168			
Carbon disulfide	13.150		"	10.233	0.16850	127	40.9-152			
Carbon Tetrachloride	12.023		"	10.233	0.0000	117	75.4-144			
Chlorobenzene	8.9126		"	10.233	0.055400	86.6	85.5-123			
Chloroethane	12.255		"	10.233	0.0000	120	70.6-150			
Chloroform	12.330		"	10.233	0.0000	120	87.6-128			
Chloromethane	13.348		"	10.233	0.0000	130	67.3-138			
cis-1,2-Dichloroethene	17.800		"	10.233	5.1862	123	85.3-127			
cis-1,3-Dichloropropene	9.3538		"	10.233	0.0000	91.4	73-125			



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Volatile Organics (VOA) - Quality Control
US-EPA, Region 4, LSASD

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2303043 - V 5030B VOA Wtr Prep

Matrix Spike (2303043-MS1)	Source: E231203-05			Prepared: 03/23/23		Analyzed: 03/24/23				
Cyclohexane	12.818		ug/L	10.233	0.11460	124	85.1-140			
Dibromochloromethane	9.0296		"	10.233	0.0000	88.2	67.1-128			
Dibromomethane	11.773		"	10.233	0.0000	115	83.2-124			
Dichlorodifluoromethane (Freon 12)	16.136		"	10.233	2.0299	138	71.1-152			
Ethyl Benzene	8.7982		"	10.233	0.053400	85.5	85-130			
Hexachlorobutadiene	8.4544		"	10.233	0.0000	82.6	67.2-136			
Isopropylbenzene	8.3469		"	10.233	0.0000	81.6	82.2-134			QM-1
Methyl Acetate	21.892		"	20.465	0.0000	107	66.1-122			
Methyl Butyl Ketone	16.952		"	20.465	0.0000	82.8	66.9-124			
Methyl Ethyl Ketone	21.524		"	20.465	0.0000	105	60.8-127			
Methyl Isobutyl Ketone	17.618		"	20.465	0.0000	86.1	73.9-125			
Methyl T-Butyl Ether (MTBE)	11.419		"	10.233	0.053100	111	76.5-127			
Methylcyclohexane	13.265		"	10.233	0.0000	130	81.4-144			
Methylene Chloride	12.574		"	10.233	0.0000	123	80.7-129			
n-Butylbenzene	8.5081		"	10.233	0.0000	83.1	74.7-136			
n-Propylbenzene	8.5177		"	10.233	0.0000	83.2	79.7-136			
o-Chlorotoluene	8.2238		"	10.233	0.0000	80.4	80.6-128			QM-1
o-Xylene	9.2003		"	10.233	0.0000	89.9	78.6-130			
p-Chlorotoluene	8.0009		"	10.233	0.0000	78.2	79.4-129			QM-1
p-Isopropyltoluene	8.5125		"	10.233	0.0000	83.2	76.7-138			
sec-Butylbenzene	8.5803		"	10.233	0.0000	83.8	79-138			
Styrene	8.8396		"	10.233	0.0000	86.4	34.5-158			
tert-Butylbenzene	8.2165		"	10.233	0.0000	80.3	79.5-134			
Tetrachloroethene (Tetrachloroethylene)	9.2435		"	10.233	0.0000	90.3	66.4-149			
Toluene	8.8652		"	10.233	0.10400	85.6	85.6-126			
trans-1,2-Dichloroethene	13.178		"	10.233	0.0000	129	86.8-128			QM-2
trans-1,3-Dichloropropene	8.8828		"	10.233	0.0000	86.8	66.9-126			
Trichloroethene (Trichloroethylene)	13.070		"	10.233	0.12180	127	87.2-128			
Trichlorofluoromethane (Freon 11)	13.292		"	10.233	0.0000	130	87.3-147			
Vinyl chloride	16.144		"	10.233	2.1988	136	84.5-135			QM-2



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 D.A.R.T. Id: 23-0150
 Project: 23-0150, Flash Cleaners - Reported by Floyd Wellborn

Volatile Organics (VOA) - Quality Control
US-EPA, Region 4, LSASD

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2303043 - V 5030B VOA Wtr Prep

Matrix Spike Dup (2303043-MSD1) **Source: E231203-05** Prepared: 03/23/23 Analyzed: 03/24/23

EPA 8260C										
(m- and/or p-)Xylene	17.650		ug/L	20.465	0.090000	85.8	81.5-138	3.56	10.3	
1,1,1,2-Tetrachloroethane	8.3053		"	10.233	0.0000	81.2	77.4-127	3.82	12.4	
1,1,1-Trichloroethane	11.562		"	10.233	0.0000	113	85.6-137	1.75	10.9	
1,1,2,2-Tetrachloroethane	7.2443		"	10.233	0.0000	70.8	78-121	0.570	13.5	QM-1
1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	12.859		"	10.233	0.0000	126	87.8-141	5.46	13.6	
1,1,2-Trichloroethane	8.3587		"	10.233	0.0000	81.7	83.6-119	4.96	11.2	QM-1
1,1-Dichloroethane	12.265		"	10.233	0.25270	117	87.6-126	2.75	11.3	
1,1-Dichloroethene (1,1-Dichloroethylene)	12.771		"	10.233	0.16600	123	87.5-133	3.07	12.8	
1,1-Dichloropropene	12.333		"	10.233	0.0000	121	90.2-132	3.70	11.1	
1,2,3-Trichlorobenzene	7.6178		"	10.233	0.0000	74.4	69.5-126	3.96	14.2	
1,2,3-Trichloropropane	6.8896		"	10.233	0.0000	67.3	78.9-120	5.29	12.8	QM-1
1,2,4-Trichlorobenzene	7.6070		"	10.233	0.0000	74.3	67.6-125	2.51	14.3	
1,2,4-Trimethylbenzene	7.8229		"	10.233	0.0000	76.4	57.5-147	6.54	16.9	
1,2-Dibromo-3-Chloropropane (DBCP)	14.146		"	20.465	0.0000	69.1	68.3-125	3.09	14.8	
1,2-Dibromoethane (EDB)	8.6081		"	10.233	0.0000	84.1	83.4-119	2.85	10.7	
1,2-Dichlorobenzene	7.4174		"	10.233	0.0000	72.5	78.4-125	5.58	11	QM-1
1,2-Dichloroethane	12.014		"	10.233	0.0000	117	83.5-129	2.45	12.1	
1,2-Dichloropropane	12.258		"	10.233	0.0000	120	85.3-125	0.859	13.2	
1,3,5-Trimethylbenzene	8.0739		"	10.233	0.0000	78.9	61.9-143	4.23	13.7	
1,3-Dichlorobenzene	7.6001		"	10.233	0.0000	74.3	79-125	3.14	11.1	QM-1
1,3-Dichloropropane	8.7370		"	10.233	0.0000	85.4	83.6-121	2.41	10.5	
1,4-Dichlorobenzene	7.5486		"	10.233	0.056400	73.2	78.3-124	5.31	10.3	QM-1
2,2-Dichloropropane	10.269		"	10.233	0.0000	100	45.4-163	4.91	18	
Acetone	22.326		"	20.465	1.5490	102	48.2-133	0.731	18.2	
Benzene	11.361		"	10.233	0.053700	110	88.8-127	3.29	10	
Bromobenzene	7.6219		"	10.233	0.0000	74.5	80.5-121	4.97	12.9	QM-1
Bromochloromethane	11.879		"	10.233	0.0000	116	82.7-126	1.33	15.3	
Bromodichloromethane	13.345		"	10.233	0.0000	130	81.1-125	2.66	12.5	QM-2
Bromoform	12.978		"	20.465	0.0000	63.4	50.7-133	5.06	21.1	
Bromomethane	11.725		"	10.233	0.0000	115	33.6-168	3.48	34.4	
Carbon disulfide	12.368		"	10.233	0.16850	119	40.9-152	6.13	39.5	
Carbon Tetrachloride	11.820		"	10.233	0.0000	116	75.4-144	1.70	15.8	
Chlorobenzene	8.5636		"	10.233	0.055400	83.1	85.5-123	3.99	10.6	QM-1
Chloroethane	11.434		"	10.233	0.0000	112	70.6-150	6.93	34.2	
Chloroform	12.068		"	10.233	0.0000	118	87.6-128	2.15	11.4	
Chloromethane	12.981		"	10.233	0.0000	127	67.3-138	2.79	29	
cis-1,2-Dichloroethene	17.478		"	10.233	5.1862	120	85.3-127	1.82	10.8	
cis-1,3-Dichloropropene	8.8978		"	10.233	0.0000	87.0	73-125	5.00	17.1	



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Volatile Organics (VOA) - Quality Control
US-EPA, Region 4, LSASD

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2303043 - V 5030B VOA Wtr Prep

Matrix Spike Dup (2303043-MSD1)	Source: E231203-05			Prepared: 03/23/23 Analyzed: 03/24/23						
Cyclohexane	12.625		ug/L	10.233	0.11460	122	85.1-140	1.52	11.5	
Dibromochloromethane	8.6995		"	10.233	0.0000	85.0	67.1-128	3.72	17.7	
Dibromomethane	11.547		"	10.233	0.0000	113	83.2-124	1.94	14.2	
Dichlorodifluoromethane (Freon 12)	15.161		"	10.233	2.0299	128	71.1-152	6.23	21.6	
Ethyl Benzene	8.4422		"	10.233	0.053400	82.0	85-130	4.13	10	QM-1
Hexachlorobutadiene	8.2963		"	10.233	0.0000	81.1	67.2-136	1.89	15.7	
Isopropylbenzene	7.9626		"	10.233	0.0000	77.8	82.2-134	4.71	12.7	QM-1
Methyl Acetate	21.543		"	20.465	0.0000	105	66.1-122	1.61	11.2	
Methyl Butyl Ketone	16.751		"	20.465	0.0000	81.9	66.9-124	1.19	13.2	
Methyl Ethyl Ketone	20.739		"	20.465	0.0000	101	60.8-127	3.72	15	
Methyl Isobutyl Ketone	17.200		"	20.465	0.0000	84.0	73.9-125	2.40	12	
Methyl T-Butyl Ether (MTBE)	11.491		"	10.233	0.053100	112	76.5-127	0.636	11.8	
Methylcyclohexane	12.824		"	10.233	0.0000	125	81.4-144	3.38	12.4	
Methylene Chloride	12.477		"	10.233	0.0000	122	80.7-129	0.782	14.3	
n-Butylbenzene	8.0793		"	10.233	0.0000	79.0	74.7-136	5.17	12.1	
n-Propylbenzene	8.0770		"	10.233	0.0000	78.9	79.7-136	5.31	11.7	QM-1
o-Chlorotoluene	7.8202		"	10.233	0.0000	76.4	80.6-128	5.03	11.3	QM-1
o-Xylene	8.8719		"	10.233	0.0000	86.7	78.6-130	3.63	10	
p-Chlorotoluene	7.6781		"	10.233	0.0000	75.0	79.4-129	4.12	11.9	QM-1
p-Isopropyltoluene	8.1625		"	10.233	0.0000	79.8	76.7-138	4.20	11.1	
sec-Butylbenzene	8.2222		"	10.233	0.0000	80.3	79-138	4.26	10.7	
Styrene	8.5565		"	10.233	0.0000	83.6	34.5-158	3.25	22.6	
tert-Butylbenzene	7.8778		"	10.233	0.0000	77.0	79.5-134	4.21	11.8	QM-1
Tetrachloroethene (Tetrachloroethylene)	9.1663		"	10.233	0.0000	89.6	66.4-149	0.839	13.4	
Toluene	8.4554		"	10.233	0.10400	81.6	85.6-126	4.73	10	QM-1
trans-1,2-Dichloroethene	12.518		"	10.233	0.0000	122	86.8-128	5.14	11	
trans-1,3-Dichloropropene	8.6560		"	10.233	0.0000	84.6	66.9-126	2.59	18	
Trichloroethene (Trichloroethylene)	12.550		"	10.233	0.12180	121	87.2-128	4.06	15	
Trichlorofluoromethane (Freon 11)	13.195		"	10.233	0.0000	129	87.3-147	0.732	18.7	
Vinyl chloride	15.568		"	10.233	2.1988	131	84.5-135	3.64	14.1	



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Volatile Organics (VOA) - Quality Control
US-EPA, Region 4, LSASD

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2303043 - V 5030B VOA Wtr Prep

MRL Verification (2303043-PS1)

Prepared & Analyzed: 03/23/23

EPA 8260C

(m- and/or p-)Xylene	1.0310		ug/L	1.0000		103	71.3-137			MRL-2
1,1,1,2-Tetrachloroethane	0.47040		"	0.50000		94.1	56.5-148			MRL-2
1,1,1-Trichloroethane	0.63010		"	0.50000		126	59.3-146			MRL-2
1,1,2,2-Tetrachloroethane	0.44910		"	0.50000		89.8	60.2-138			MRL-2
1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	0.47600		"	0.50000		95.2	60-144			MRL-2
1,1,2-Trichloroethane	0.45970		"	0.50000		91.9	67.1-131			MRL-2
1,1-Dichloroethane	0.58550		"	0.50000		117	67.8-133			MRL-2
1,1-Dichloroethene (1,1-Dichloroethylene)	0.47490		"	0.50000		95.0	65.4-136			MRL-2
1,1-Dichloropropene	0.49060		"	0.50000		98.1	69.4-135			MRL-2
1,2,3-Trichlorobenzene	0.39360		"	0.50000		78.7	65-137			MRL-2
1,2,3-Trichloropropane	0.35390		"	0.50000		70.8	63.4-134			MRL-2
1,2,4-Trichlorobenzene	0.41510		"	0.50000		83.0	63.9-137			MRL-2
1,2,4-Trimethylbenzene	0.43520		"	0.50000		87.0	66.5-141			MRL-2
1,2-Dibromo-3-Chloropropane (DBCP)	0.83220		"	1.0000		83.2	52.3-156			MRL-2
1,2-Dibromoethane (EDB)	0.47410		"	0.50000		94.8	67.3-135			MRL-2
1,2-Dichlorobenzene	0.50970		"	0.50000		102	66.4-131			MRL-2
1,2-Dichloroethane	0.57560		"	0.50000		115	63.9-142			MRL-2
1,2-Dichloropropane	0.63880		"	0.50000		128	68-133			MRL-2
1,3,5-Trimethylbenzene	0.44430		"	0.50000		88.9	66.8-139			MRL-2
1,3-Dichlorobenzene	0.44690		"	0.50000		89.4	66.4-132			MRL-2
1,3-Dichloropropane	0.49120		"	0.50000		98.2	67.4-133			MRL-2
1,4-Dichlorobenzene	0.47130		"	0.50000		94.3	66.5-130			MRL-2
2,2-Dichloropropane	0.52070		"	0.50000		104	33.4-174			MRL-2
Benzene	0.51870		"	0.50000		104	69.6-133			MRL-2
Bromobenzene	0.43090		"	0.50000		86.2	64.6-132			MRL-2
Bromochloromethane	0.42830		"	0.50000		85.7	63.6-137			MRL-2
Bromodichloromethane	0.55550		"	0.50000		111	60-145			MRL-2
Bromoform	0.84000		"	1.0000		84.0	43.1-162			MRL-2
Carbon Tetrachloride	0.52700		"	0.50000		105	48.8-160			MRL-2
Chlorobenzene	0.40000		"	0.50000		80.0	68.4-129			MRL-2
Chloroform	0.56330		"	0.50000		113	67.9-135			MRL-2
Chloromethane	0.59410		"	0.50000		119	48.9-138			MRL-2
cis-1,2-Dichloroethene	0.52110		"	0.50000		104	67.6-135			MRL-2
cis-1,3-Dichloropropene	0.41830		"	0.50000		83.7	61-141			MRL-2
Cyclohexane	0.53820		"	0.50000		108	63.5-142			MRL-2
Dibromochloromethane	0.50520		"	0.50000		101	51.7-153			MRL-2
Dibromomethane	0.48870		"	0.50000		97.7	67.3-137			MRL-2
Dichlorodifluoromethane (Freon 12)	0.46760		"	0.50000		93.5	43.5-152			MRL-2



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Volatile Organics (VOA) - Quality Control
US-EPA, Region 4, LSASD

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2303043 - V 5030B VOA Wtr Prep

MRL Verification (2303043-PS1)

Prepared & Analyzed: 03/23/23

Ethyl Benzene	0.45740		ug/L	0.50000		91.5	70-134			MRL-2
Hexachlorobutadiene	0.39880		"	0.50000		79.8	60.2-136			MRL-2
Isopropylbenzene	0.45190		"	0.50000		90.4	64.5-140			MRL-2
Methyl Acetate	0.85380		"	1.0000		85.4	55.8-141			MRL-2
Methyl Butyl Ketone	0.88720		"	1.0000		88.7	49.9-156			MRL-2
Methyl Isobutyl Ketone	0.79430		"	1.0000		79.4	57-147			MRL-2
Methyl T-Butyl Ether (MTBE)	0.50750		"	0.50000		102	60.1-143			MRL-2
Methylcyclohexane	0.43900		"	0.50000		87.8	62.6-144			MRL-2
Methylene Chloride	0.45980		"	0.50000		92.0	61.2-138			MRL-2
n-Butylbenzene	0.42160		"	0.50000		84.3	65.7-141			MRL-2
n-Propylbenzene	0.45940		"	0.50000		91.9	67-137			MRL-2
o-Chlorotoluene	0.48610		"	0.50000		97.2	65.8-134			MRL-2
o-Xylene	0.53910		"	0.50000		108	68.9-136			MRL-2
p-Chlorotoluene	0.46050		"	0.50000		92.1	66.5-134			MRL-2
p-Isopropyltoluene	0.40850		"	0.50000		81.7	66.3-143			MRL-2
sec-Butylbenzene	0.42930		"	0.50000		85.9	66.2-140			MRL-2
Styrene	0.43960		"	0.50000		87.9	69.9-139			MRL-2
tert-Butylbenzene	0.45230		"	0.50000		90.5	65.2-139			MRL-2
Tetrachloroethene (Tetrachloroethylene)	0.43380		"	0.50000		86.8	65.1-133			MRL-2
Toluene	0.41740		"	0.50000		83.5	67.7-131			MRL-2
trans-1,2-Dichloroethene	0.48240		"	0.50000		96.5	66.6-134			MRL-2
trans-1,3-Dichloropropene	0.44950		"	0.50000		89.9	57.4-147			MRL-2
Trichloroethene (Trichloroethylene)	0.50010		"	0.50000		100	67.8-134			MRL-2
Trichlorofluoromethane (Freon 11)	0.52490		"	0.50000		105	58-149			MRL-2
Vinyl chloride	0.51670		"	0.50000		103	58.8-135			MRL-2

MRL Verification (2303043-PS2)

Prepared & Analyzed: 03/23/23

EPA 8260C

Acetone	5.0974		ug/L	4.0000		127	29.7-173			MRL-2
Bromomethane	2.1062		"	2.0000		105	29.9-160			MRL-2
Carbon disulfide	2.2795		"	2.0000		114	61.7-134			MRL-2
Chloroethane	2.0849		"	2.0000		104	56.7-138			MRL-2
Methyl Ethyl Ketone	3.9945		"	4.0000		99.9	48.1-155			MRL-2



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Notes and Definitions for QC Samples

- U The analyte was not detected at or above the reporting limit.
- MRL-2 MRL verification for Non-Potable Water matrix
- QM-1 Matrix Spike Recovery less than method control limits
- QM-2 Matrix Spike Recovery greater than method control limits



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April 18, 2023

MEMORANDUM

SUBJECT: FINAL Analytical Report
 Project: 23-0150, Flash Cleaners

FROM: Floyd Wellborn
 LSB Technical Advisor

THRU: Stacie Masters, Chief
 Laboratory Services Branch

TO: Paula Whiting

Attached are the final results for the analytical groups listed below. This report shall not be reproduced except in full without approval of the Region 4 laboratory. These analyses were performed in accordance with the Laboratory Services Branch's Laboratory Operations and Quality Assurance Manual (LSB LOQAM) found at www.epa.gov/region4/sesd/asbsop. Any unique project data quality objectives specified in writing by the data requestor have also been incorporated into the data unless otherwise noted in the Report Narrative. Chemistry data have been verified based on the LSB LOQAM specifications and have been qualified by this laboratory if the applicable quality control criteria were not met. Verification is defined in Chapter 5 of the LSB LOQAM. For a listing of specific data qualifiers and explanations, please refer to the Data Qualifier Definitions included in this report. The reported results are accurate within the limits of the method(s) and are representative only of the samples as received by the laboratory.

Analyses Included in this report:	Method Used:	Accreditations:
Semi Volatile Organics (SVOA)		
PFAS	ASTM D7979-19 (Water)	ISO



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Sample Disposal Policy

Due to limited space for long term sample storage, LSB's policy is to dispose of samples on a periodic schedule. Air samples collected in summa canisters will be disposed of 30 days following the issuance of this report. All other sample media including original samples, sample extracts and or digestates will be disposed of, in accordance with applicable regulations, 60 days from the date of this report.

This sample disposal policy does not apply to criminal samples which are held until the laboratory is notified by the criminal investigators that case development and litigation are complete.

These samples may be held in the laboratory's custody for a longer period of time. If samples require storage beyond the 60-day period, please contact the Sample Control Coordinator by e-mail at R4SampleCustody@epa.gov.

cc: Nardina Turner



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SAMPLES INCLUDED IN THIS REPORT

Project: 23-0150, Flash Cleaners

Sample ID	Laboratory ID	Matrix	Date Collected	Date Received
TB010323	E231202-01	Trip Blank - Water	3/15/23 10:20	3/20/23 8:30
FCMW03-0323	E231202-03	Groundwater	3/15/23 13:15	3/20/23 8:30
FCMW06-0323	E231202-04	Groundwater	3/15/23 14:15	3/20/23 8:30
FCMW07-0323	E231202-05	Groundwater	3/15/23 10:20	3/20/23 8:30
FCMW10-0323	E231202-06	Groundwater	3/15/23 12:20	3/20/23 8:30
FCMW23-0323	E231202-07	Groundwater	3/15/23 15:10	3/20/23 8:30



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Laboratory Services and Applied Science Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 23-0150
Project: 23-0150, Flash Cleaners - Reported by Floyd Wellborn

DATA QUALIFIER DEFINITIONS

- U The analyte was not detected at or above the reporting limit.
- J The identification of the analyte is acceptable; the reported value is an estimate.
- Q-2 Result greater than MDL but less than MRL.
- QC-4 Result greater than the highest point on the calibration curve
- QC-7 The relative intensities and/or ratios of the characteristic ions do not agree with the relative intensities/ratios of the ions in the reference spectrum

ACRONYMS AND ABBREVIATIONS

- CAS Chemical Abstracts Service
- Note: Analytes with no known CAS identifiers have been assigned codes beginning with "E", the EPA ID as assigned by the EPA Substance Registry System (www.epa.gov/srs), or beginning with "R4-", a unique identifier assigned by the EPA Region 4 laboratory.
- MDL Method Detection Limit - The minimum concentration of a substance (an analyte) that can be measured and reported with a 99% confidence that the analyte concentration is greater than zero.
- MRL Minimum Reporting Limit - Analyte concentration that corresponds to the lowest demonstrated level of acceptable quantitation. The MRL is sample-specific and accounts for preparation weights and volumes, dilutions, and moisture content of soil/sediments.
- TIC Tentatively Identified Compound - An analyte identified based on a match with the instrument software's mass spectral library. A calibration standard has not been analyzed to confirm the compound's identification or the estimated concentration reported.

ACCREDITATIONS:

- ISO Accredited to ISO/IEC 17025:2017 and accreditation requirements for Forensic Science Testing Laboratories.
- Refer to the certificate and scope of accreditation FT-0330 at:
<http://www.epa.gov/aboutepa/about-region-4s-science-and-ecosystem-support-division-sesd>
- NR Not accredited for this test.
- DW Accredited for conformance with ISO/IEC 17025:2017 and testing elements in the Fifth Edition of the Manual for the Certification of Laboratories Analyzing Drinking Water, EPA 815-R-05-004, 2005.
- Refer to the certificate and scope of accreditation AT-2628 at:
<http://www.epa.gov/aboutepa/about-region-4s-science-and-ecosystem-support-division-sesd>
- ISO/DW Accredited to ISO/IEC 17025:2017 and accreditation requirements for Forensic Science Testing Labs, and conformance with ISO/IEC 17025:2017 and testing elements in the Manual for the Certification of Laboratories Analyzing Drinking Water.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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 980 College Station Road, Athens, Georgia 30605-2700
 D.A.R.T. Id: 23-0150
 Project: 23-0150, Flash Cleaners - Reported by Floyd Wellborn

Semi Volatile Organics

Project: 23-0150, Flash Cleaners

Sample ID: **TB010323**

Lab ID: **E231202-01**

Station ID:

Matrix: Trip Blank - Water

Date Collected: 3/15/23 10:20

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
757124-72-4	4:2FTS	9.4	U	ng/L	9.4	3/28/23 14:53	4/06/23 18:36	ASTM D7979-19
27619-97-2	6:2FTS	9.5	U	ng/L	9.5	3/28/23 14:53	4/06/23 18:36	ASTM D7979-19
39108-34-4	8:2FTS	9.6	U	ng/L	9.6	3/28/23 14:53	4/06/23 18:36	ASTM D7979-19
754-91-6	FOSA	10	U	ng/L	10	3/28/23 14:53	4/06/23 18:36	ASTM D7979-19
13252-13-6	HFPO-DA	20	U	ng/L	20	3/28/23 14:53	4/06/23 18:36	ASTM D7979-19
2991-50-6	N-EtFOSAA	10	U	ng/L	10	3/28/23 14:53	4/06/23 18:36	ASTM D7979-19
2355-31-9	N-MeFOSAA	10	U	ng/L	10	3/28/23 14:53	4/06/23 18:36	ASTM D7979-19
375-22-4	PFBA	20	U	ng/L	20	3/28/23 14:53	4/06/23 18:36	ASTM D7979-19
375-73-5	PFBS	8.9	U	ng/L	8.9	3/28/23 14:53	4/06/23 18:36	ASTM D7979-19
335-76-2	PFDA	10	U	ng/L	10	3/28/23 14:53	4/06/23 18:36	ASTM D7979-19
307-55-1	PFDoA	10	U	ng/L	10	3/28/23 14:53	4/06/23 18:36	ASTM D7979-19
335-77-3	PFDS	9.7	U	ng/L	9.7	3/28/23 14:53	4/06/23 18:36	ASTM D7979-19
375-85-9	PFHpA	10	U	ng/L	10	3/28/23 14:53	4/06/23 18:36	ASTM D7979-19
375-92-8	PFHpS	19	U	ng/L	19	3/28/23 14:53	4/06/23 18:36	ASTM D7979-19
307-24-4	PFHxA	20	U	ng/L	20	3/28/23 14:53	4/06/23 18:36	ASTM D7979-19
355-46-4	PFHxS	9.2	U	ng/L	9.2	3/28/23 14:53	4/06/23 18:36	ASTM D7979-19
375-95-1	PFNA	10	U	ng/L	10	3/28/23 14:53	4/06/23 18:36	ASTM D7979-19
68259-12-1	PFNS	9.6	U	ng/L	9.6	3/28/23 14:53	4/06/23 18:36	ASTM D7979-19
335-67-1	PFOA	10	U	ng/L	10	3/28/23 14:53	4/06/23 18:36	ASTM D7979-19
1763-23-1	PFOS	9.3	U	ng/L	9.3	3/28/23 14:53	4/06/23 18:36	ASTM D7979-19
2706-90-3	PFPeA	10	U	ng/L	10	3/28/23 14:53	4/06/23 18:36	ASTM D7979-19
2706-91-4	PFPeS	9.4	U	ng/L	9.4	3/28/23 14:53	4/06/23 18:36	ASTM D7979-19
376-06-7	PFTeDA	20	U	ng/L	20	3/28/23 14:53	4/06/23 18:36	ASTM D7979-19
72629-94-8	PFTTrDA	10	U	ng/L	10	3/28/23 14:53	4/06/23 18:36	ASTM D7979-19
2058-94-8	PFUdA	10	U	ng/L	10	3/28/23 14:53	4/06/23 18:36	ASTM D7979-19



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
 Region 4 Laboratory Services and Applied Science Division
 980 College Station Road, Athens, Georgia 30605-2700
 D.A.R.T. Id: 23-0150
 Project: 23-0150, Flash Cleaners - Reported by Floyd Wellborn

Semi Volatile Organics

Project: 23-0150, Flash Cleaners

Sample ID: FCMW03-0323

Lab ID: E231202-03

Station ID: FCMW03

Matrix: Groundwater

Date Collected: 3/15/23 13:15

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
757124-72-4	4:2FTS	9.2	U	ng/L	9.2	4/05/23 15:18	4/06/23 18:55	ASTM D7979-19
27619-97-2	6:2FTS	9.4	U	ng/L	9.4	4/05/23 15:18	4/06/23 18:55	ASTM D7979-19
39108-34-4	8:2FTS	9.5	U	ng/L	9.5	4/05/23 15:18	4/06/23 18:55	ASTM D7979-19
754-91-6	FOSA	3.6		ng/L	9.9	4/05/23 15:18	4/06/23 18:55	ASTM D7979-19
13252-13-6	HFPO-DA	20	U	ng/L	20	4/05/23 15:18	4/06/23 18:55	ASTM D7979-19
2991-50-6	N-EtFOSAA	9.9	U	ng/L	9.9	4/05/23 15:18	4/06/23 18:55	ASTM D7979-19
2355-31-9	N-MeFOSAA	9.9	U	ng/L	9.9	4/05/23 15:18	4/06/23 18:55	ASTM D7979-19
375-22-4	PFBA	56		ng/L	20	4/05/23 15:18	4/06/23 18:55	ASTM D7979-19
375-73-5	PFBS	31	J, QC-7	ng/L	8.7	4/05/23 15:18	4/06/23 18:55	ASTM D7979-19
335-76-2	PFDA	9.9	U	ng/L	9.9	4/05/23 15:18	4/06/23 18:55	ASTM D7979-19
307-55-1	PFDoA	9.9	U	ng/L	9.9	4/05/23 15:18	4/06/23 18:55	ASTM D7979-19
335-77-3	PFDS	9.5	U	ng/L	9.5	4/05/23 15:18	4/06/23 18:55	ASTM D7979-19
375-85-9	PFHpA	57		ng/L	9.9	4/05/23 15:18	4/06/23 18:55	ASTM D7979-19
375-92-8	PFHpS	17	J, QC-7, Q-2	ng/L	19	4/05/23 15:18	4/06/23 18:55	ASTM D7979-19
307-24-4	PFHxA	58		ng/L	20	4/05/23 15:18	4/06/23 18:55	ASTM D7979-19
355-46-4	PFHxS	56		ng/L	9.0	4/05/23 15:18	4/06/23 18:55	ASTM D7979-19
375-95-1	PFNA	17		ng/L	9.9	4/05/23 15:18	4/06/23 18:55	ASTM D7979-19
68259-12-1	PFNS	9.5	U	ng/L	9.5	4/05/23 15:18	4/06/23 18:55	ASTM D7979-19
335-67-1	PFOA	180		ng/L	9.9	4/05/23 15:18	4/06/23 18:55	ASTM D7979-19
1763-23-1	PFOS	1600	J, QC-4	ng/L	9.1	4/05/23 15:18	4/06/23 18:55	ASTM D7979-19
2706-90-3	PFPeA	180		ng/L	9.9	4/05/23 15:18	4/06/23 18:55	ASTM D7979-19
2706-91-4	PFPeS	22		ng/L	9.3	4/05/23 15:18	4/06/23 18:55	ASTM D7979-19
376-06-7	PFTeDA	20	U	ng/L	20	4/05/23 15:18	4/06/23 18:55	ASTM D7979-19
72629-94-8	PFTTrDA	9.9	U	ng/L	9.9	4/05/23 15:18	4/06/23 18:55	ASTM D7979-19
2058-94-8	PFUdA	9.9	U	ng/L	9.9	4/05/23 15:18	4/06/23 18:55	ASTM D7979-19



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
 Region 4 Laboratory Services and Applied Science Division
 980 College Station Road, Athens, Georgia 30605-2700
 D.A.R.T. Id: 23-0150
 Project: 23-0150, Flash Cleaners - Reported by Floyd Wellborn

Semi Volatile Organics

Project: 23-0150, Flash Cleaners

Sample ID: FCMW06-0323

Lab ID: E231202-04

Station ID: FCMW06

Matrix: Groundwater

Date Collected: 3/15/23 14:15

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
757124-72-4	4:2FTS	9.4	U	ng/L	9.4	4/05/23 15:18	4/06/23 19:14	ASTM D7979-19
27619-97-2	6:2FTS	9.5	U	ng/L	9.5	4/05/23 15:18	4/06/23 19:14	ASTM D7979-19
39108-34-4	8:2FTS	9.6	U	ng/L	9.6	4/05/23 15:18	4/06/23 19:14	ASTM D7979-19
754-91-6	FOSA	10	U	ng/L	10	4/05/23 15:18	4/06/23 19:14	ASTM D7979-19
13252-13-6	HFPO-DA	20	U	ng/L	20	4/05/23 15:18	4/06/23 19:14	ASTM D7979-19
2991-50-6	N-EtFOSAA	10	U	ng/L	10	4/05/23 15:18	4/06/23 19:14	ASTM D7979-19
2355-31-9	N-MeFOSAA	14	J, QC-7	ng/L	10	4/05/23 15:18	4/06/23 19:14	ASTM D7979-19
375-22-4	PFBA	36		ng/L	20	4/05/23 15:18	4/06/23 19:14	ASTM D7979-19
375-73-5	PFBS	9.4	J, QC-7	ng/L	8.8	4/05/23 15:18	4/06/23 19:14	ASTM D7979-19
335-76-2	PFDA	10	U	ng/L	10	4/05/23 15:18	4/06/23 19:14	ASTM D7979-19
307-55-1	PFDoA	10	U	ng/L	10	4/05/23 15:18	4/06/23 19:14	ASTM D7979-19
335-77-3	PFDS	9.6	U	ng/L	9.6	4/05/23 15:18	4/06/23 19:14	ASTM D7979-19
375-85-9	PFHpA	19	J, QC-7	ng/L	10	4/05/23 15:18	4/06/23 19:14	ASTM D7979-19
375-92-8	PFHpS	19	U	ng/L	19	4/05/23 15:18	4/06/23 19:14	ASTM D7979-19
307-24-4	PFHxA	8.7	J, Q-2, QC-7	ng/L	20	4/05/23 15:18	4/06/23 19:14	ASTM D7979-19
355-46-4	PFHxS	17		ng/L	9.1	4/05/23 15:18	4/06/23 19:14	ASTM D7979-19
375-95-1	PFNA	16		ng/L	10	4/05/23 15:18	4/06/23 19:14	ASTM D7979-19
68259-12-1	PFNS	9.6	U	ng/L	9.6	4/05/23 15:18	4/06/23 19:14	ASTM D7979-19
335-67-1	PFOA	24		ng/L	10	4/05/23 15:18	4/06/23 19:14	ASTM D7979-19
1763-23-1	PFOS	1700		ng/L	46	4/05/23 15:18	4/10/23 13:07	ASTM D7979-19
2706-90-3	PFPeA	32		ng/L	10	4/05/23 15:18	4/06/23 19:14	ASTM D7979-19
2706-91-4	PFPeS	9.4	U	ng/L	9.4	4/05/23 15:18	4/06/23 19:14	ASTM D7979-19
376-06-7	PFTeDA	20	U	ng/L	20	4/05/23 15:18	4/06/23 19:14	ASTM D7979-19
72629-94-8	PFTTrDA	10	U	ng/L	10	4/05/23 15:18	4/06/23 19:14	ASTM D7979-19
2058-94-8	PFUdA	10	U	ng/L	10	4/05/23 15:18	4/06/23 19:14	ASTM D7979-19



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
 Region 4 Laboratory Services and Applied Science Division
 980 College Station Road, Athens, Georgia 30605-2700
 D.A.R.T. Id: 23-0150
 Project: 23-0150, Flash Cleaners - Reported by Floyd Wellborn

Semi Volatile Organics

Project: 23-0150, Flash Cleaners

Sample ID: FCMW07-0323

Lab ID: E231202-05

Station ID: FCMW07

Matrix: Groundwater

Date Collected: 3/15/23 10:20

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
757124-72-4	4:2FTS	9.3	U	ng/L	9.3	4/05/23 15:18	4/06/23 19:33	ASTM D7979-19
27619-97-2	6:2FTS	9.4	U	ng/L	9.4	4/05/23 15:18	4/06/23 19:33	ASTM D7979-19
39108-34-4	8:2FTS	9.5	U	ng/L	9.5	4/05/23 15:18	4/06/23 19:33	ASTM D7979-19
754-91-6	FOSA	9.9	U	ng/L	9.9	4/05/23 15:18	4/06/23 19:33	ASTM D7979-19
13252-13-6	HFPO-DA	20	U	ng/L	20	4/05/23 15:18	4/06/23 19:33	ASTM D7979-19
2991-50-6	N-EtFOSAA	9.9	U	ng/L	9.9	4/05/23 15:18	4/06/23 19:33	ASTM D7979-19
2355-31-9	N-MeFOSAA	9.9	U	ng/L	9.9	4/05/23 15:18	4/06/23 19:33	ASTM D7979-19
375-22-4	PFBA	17	J, Q-2	ng/L	20	4/05/23 15:18	4/06/23 19:33	ASTM D7979-19
375-73-5	PFBS	8.8	U	ng/L	8.8	4/05/23 15:18	4/06/23 19:33	ASTM D7979-19
335-76-2	PFDA	9.9	U	ng/L	9.9	4/05/23 15:18	4/06/23 19:33	ASTM D7979-19
307-55-1	PFDoA	9.9	U	ng/L	9.9	4/05/23 15:18	4/06/23 19:33	ASTM D7979-19
335-77-3	PFDS	9.6	U	ng/L	9.6	4/05/23 15:18	4/06/23 19:33	ASTM D7979-19
375-85-9	PFHpA	14		ng/L	9.9	4/05/23 15:18	4/06/23 19:33	ASTM D7979-19
375-92-8	PFHpS	19	U	ng/L	19	4/05/23 15:18	4/06/23 19:33	ASTM D7979-19
307-24-4	PFHxA	22	J, QC-7	ng/L	20	4/05/23 15:18	4/06/23 19:33	ASTM D7979-19
355-46-4	PFHxS	9.1	U	ng/L	9.1	4/05/23 15:18	4/06/23 19:33	ASTM D7979-19
375-95-1	PFNA	9.9	U	ng/L	9.9	4/05/23 15:18	4/06/23 19:33	ASTM D7979-19
68259-12-1	PFNS	9.5	U	ng/L	9.5	4/05/23 15:18	4/06/23 19:33	ASTM D7979-19
335-67-1	PFOA	18		ng/L	9.9	4/05/23 15:18	4/06/23 19:33	ASTM D7979-19
1763-23-1	PFOS	15		ng/L	9.2	4/05/23 15:18	4/06/23 19:33	ASTM D7979-19
2706-90-3	PFPeA	33		ng/L	9.9	4/05/23 15:18	4/06/23 19:33	ASTM D7979-19
2706-91-4	PFPeS	9.3	U	ng/L	9.3	4/05/23 15:18	4/06/23 19:33	ASTM D7979-19
376-06-7	PFTeDA	20	U	ng/L	20	4/05/23 15:18	4/06/23 19:33	ASTM D7979-19
72629-94-8	PFTTrDA	9.9	U	ng/L	9.9	4/05/23 15:18	4/06/23 19:33	ASTM D7979-19
2058-94-8	PFUdA	9.9	U	ng/L	9.9	4/05/23 15:18	4/06/23 19:33	ASTM D7979-19



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 980 College Station Road, Athens, Georgia 30605-2700
 D.A.R.T. Id: 23-0150
 Project: 23-0150, Flash Cleaners - Reported by Floyd Wellborn

Semi Volatile Organics

Project: 23-0150, Flash Cleaners

Sample ID: FCMW10-0323

Lab ID: E231202-06

Station ID: FCMW10

Matrix: Groundwater

Date Collected: 3/15/23 12:20

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
757124-72-4	4:2FTS	9.4	U	ng/L	9.4	4/05/23 15:18	4/06/23 19:51	ASTM D7979-19
27619-97-2	6:2FTS	9.5	U	ng/L	9.5	4/05/23 15:18	4/06/23 19:51	ASTM D7979-19
39108-34-4	8:2FTS	9.6	U	ng/L	9.6	4/05/23 15:18	4/06/23 19:51	ASTM D7979-19
754-91-6	FOSA	10	U	ng/L	10	4/05/23 15:18	4/06/23 19:51	ASTM D7979-19
13252-13-6	HFPO-DA	20	U	ng/L	20	4/05/23 15:18	4/06/23 19:51	ASTM D7979-19
2991-50-6	N-EtFOSAA	10	U	ng/L	10	4/05/23 15:18	4/06/23 19:51	ASTM D7979-19
2355-31-9	N-MeFOSAA	10	U	ng/L	10	4/05/23 15:18	4/06/23 19:51	ASTM D7979-19
375-22-4	PFBA	15	J, Q-2	ng/L	20	4/05/23 15:18	4/06/23 19:51	ASTM D7979-19
375-73-5	PFBS	9.1	J, QC-7	ng/L	8.9	4/05/23 15:18	4/06/23 19:51	ASTM D7979-19
335-76-2	PFDA	10	U	ng/L	10	4/05/23 15:18	4/06/23 19:51	ASTM D7979-19
307-55-1	PFDoA	10	U	ng/L	10	4/05/23 15:18	4/06/23 19:51	ASTM D7979-19
335-77-3	PFDS	9.7	U	ng/L	9.7	4/05/23 15:18	4/06/23 19:51	ASTM D7979-19
375-85-9	PFHpA	13		ng/L	10	4/05/23 15:18	4/06/23 19:51	ASTM D7979-19
375-92-8	PFHpS	19	U	ng/L	19	4/05/23 15:18	4/06/23 19:51	ASTM D7979-19
307-24-4	PFHxA	19	J, Q-2, QC-7	ng/L	20	4/05/23 15:18	4/06/23 19:51	ASTM D7979-19
355-46-4	PFHxS	9.2	U	ng/L	9.2	4/05/23 15:18	4/06/23 19:51	ASTM D7979-19
375-95-1	PFNA	10	U	ng/L	10	4/05/23 15:18	4/06/23 19:51	ASTM D7979-19
68259-12-1	PFNS	9.6	U	ng/L	9.6	4/05/23 15:18	4/06/23 19:51	ASTM D7979-19
335-67-1	PFOA	15	J, QC-7	ng/L	10	4/05/23 15:18	4/06/23 19:51	ASTM D7979-19
1763-23-1	PFOS	21	J, QC-7	ng/L	9.3	4/05/23 15:18	4/06/23 19:51	ASTM D7979-19
2706-90-3	PFPeA	27		ng/L	10	4/05/23 15:18	4/06/23 19:51	ASTM D7979-19
2706-91-4	PFPeS	9.4	U	ng/L	9.4	4/05/23 15:18	4/06/23 19:51	ASTM D7979-19
376-06-7	PFTeDA	20	U	ng/L	20	4/05/23 15:18	4/06/23 19:51	ASTM D7979-19
72629-94-8	PFTTrDA	10	U	ng/L	10	4/05/23 15:18	4/06/23 19:51	ASTM D7979-19
2058-94-8	PFUdA	10	U	ng/L	10	4/05/23 15:18	4/06/23 19:51	ASTM D7979-19



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 D.A.R.T. Id: 23-0150
 Project: 23-0150, Flash Cleaners - Reported by Floyd Wellborn

Semi Volatile Organics

Project: 23-0150, Flash Cleaners

Sample ID: FCMW23-0323

Lab ID: E231202-07

Station ID: FCMW23

Matrix: Groundwater

Date Collected: 3/15/23 15:10

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
757124-72-4	4:2FTS	9.3	U	ng/L	9.3	4/05/23 15:18	4/06/23 20:10	ASTM D7979-19
27619-97-2	6:2FTS	9.4	U	ng/L	9.4	4/05/23 15:18	4/06/23 20:10	ASTM D7979-19
39108-34-4	8:2FTS	9.5	U	ng/L	9.5	4/05/23 15:18	4/06/23 20:10	ASTM D7979-19
754-91-6	FOSA	9.9	U	ng/L	9.9	4/05/23 15:18	4/06/23 20:10	ASTM D7979-19
13252-13-6	HFPO-DA	20	U	ng/L	20	4/05/23 15:18	4/06/23 20:10	ASTM D7979-19
2991-50-6	N-EtFOSAA	9.9	U	ng/L	9.9	4/05/23 15:18	4/06/23 20:10	ASTM D7979-19
2355-31-9	N-MeFOSAA	9.9	U	ng/L	9.9	4/05/23 15:18	4/06/23 20:10	ASTM D7979-19
375-22-4	PFBA	15	J, Q-2	ng/L	20	4/05/23 15:18	4/06/23 20:10	ASTM D7979-19
375-73-5	PFBS	31		ng/L	8.8	4/05/23 15:18	4/06/23 20:10	ASTM D7979-19
335-76-2	PFDA	9.9	U	ng/L	9.9	4/05/23 15:18	4/06/23 20:10	ASTM D7979-19
307-55-1	PFDoA	9.9	U	ng/L	9.9	4/05/23 15:18	4/06/23 20:10	ASTM D7979-19
335-77-3	PFDS	9.6	U	ng/L	9.6	4/05/23 15:18	4/06/23 20:10	ASTM D7979-19
375-85-9	PFHpA	14		ng/L	9.9	4/05/23 15:18	4/06/23 20:10	ASTM D7979-19
375-92-8	PFHpS	19	U	ng/L	19	4/05/23 15:18	4/06/23 20:10	ASTM D7979-19
307-24-4	PFHxA	19	J, Q-2, QC-7	ng/L	20	4/05/23 15:18	4/06/23 20:10	ASTM D7979-19
355-46-4	PFHxS	9.1	U	ng/L	9.1	4/05/23 15:18	4/06/23 20:10	ASTM D7979-19
375-95-1	PFNA	45		ng/L	9.9	4/05/23 15:18	4/06/23 20:10	ASTM D7979-19
68259-12-1	PFNS	9.5	U	ng/L	9.5	4/05/23 15:18	4/06/23 20:10	ASTM D7979-19
335-67-1	PFOA	19		ng/L	9.9	4/05/23 15:18	4/06/23 20:10	ASTM D7979-19
1763-23-1	PFOS	56		ng/L	9.2	4/05/23 15:18	4/06/23 20:10	ASTM D7979-19
2706-90-3	PFPeA	27		ng/L	9.9	4/05/23 15:18	4/06/23 20:10	ASTM D7979-19
2706-91-4	PFPeS	9.3	U	ng/L	9.3	4/05/23 15:18	4/06/23 20:10	ASTM D7979-19
376-06-7	PFTeDA	20	U	ng/L	20	4/05/23 15:18	4/06/23 20:10	ASTM D7979-19
72629-94-8	PFTTrDA	9.9	U	ng/L	9.9	4/05/23 15:18	4/06/23 20:10	ASTM D7979-19
2058-94-8	PFUdA	9.9	U	ng/L	9.9	4/05/23 15:18	4/06/23 20:10	ASTM D7979-19



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 Project: 23-0150, Flash Cleaners - Reported by Floyd Wellborn

Semi Volatile Organics (SVOA) - Quality Control
US-EPA, Region 4, LSASD

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2304003 - S PFC

Blank (2304003-BLK1)

Prepared: 04/05/23 Analyzed: 04/06/23

ASTM D7979-19

4:2FTS	U	9.4	ng/L							U
6:2FTS	U	9.5	"							U
8:2FTS	U	9.6	"							U
FOSA	U	10	"							U
HFPO-DA	U	20	"							U
N-EtFOSAA	U	10	"							U
N-MeFOSAA	U	10	"							U
PFBA	U	20	"							U
PFBS	U	8.8	"							U
PFDA	U	10	"							U
PFDoA	U	10	"							U
PFDS	U	9.6	"							U
PFHpA	U	10	"							U
PFHpS	U	19	"							U
PFHxA	U	20	"							U
PFHxS	U	9.1	"							U
PFNA	U	10	"							U
PFNS	U	9.6	"							U
PFOA	U	10	"							U
PFOS	U	9.3	"							U
PFPeA	U	10	"							U
PFPeS	U	9.4	"							U
PFTeDA	U	20	"							U
PFTTrDA	U	10	"							U
PFUdA	U	10	"							U

LCS (2304003-BS1)

Prepared: 04/05/23 Analyzed: 04/06/23

ASTM D7979-19

4:2FTS	469	9.4	ng/L	374.00	125	67.1-125				
6:2FTS	447	9.5	"	380.00	118	49.2-134				
8:2FTS	561	9.6	"	384.00	146	56.4-136				QL-2
FOSA	391	10	"	400.00	97.8	57.7-148				
HFPO-DA	393	20	"	400.00	98.2	51.1-127				
N-EtFOSAA	553	10	"	400.00	138	47.2-185.3				
N-MeFOSAA	459	10	"	400.00	115	43.2-178				
PFBA	424	20	"	400.00	106	67.9-118				
PFBS	374	8.8	"	354.00	106	68.2-118				
PFDA	455	10	"	400.00	114	47.4-162				
PFDoA	434	10	"	400.00	108	56.5-155				



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Semi Volatile Organics (SVOA) - Quality Control
US-EPA, Region 4, LSASD

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2304003 - S PFC

LCS (2304003-BS1)

Prepared: 04/05/23 Analyzed: 04/06/23

PFDS	419	9.6	ng/L	386.00		108	35.1-168			
PFHpA	426	10	"	400.00		107	72.8-116			
PFHpS	420	19	"	380.00		110	59.7-130			
PFHxA	421	20	"	400.00		105	62.6-127			
PFHxS	407	9.1	"	364.80		112	69.5-117			
PFNA	448	10	"	400.00		112	64.1-128.4			
PFNS	396	9.6	"	384.00		103	63.3-126			
PFOA	431	10	"	400.00		108	66.7-122			
PFOS	406	9.3	"	370.20		110	70.4-122			
PFPeA	423	10	"	400.00		106	72-115			
PFPeS	392	9.4	"	376.00		104	69-117			
PFTeDA	463	20	"	400.00		116	42.9-179			
PFTrDA	421	10	"	400.00		105	32.2-215			
PFUdA	448	10	"	400.00		112	65.8-142			

Matrix Spike (2304003-MS1)

Source: E231202-07RE1

Prepared: 04/05/23 Analyzed: 04/06/23

ASTM D7979-19

4:2FTS	917	9.4	ng/L	375.50	U	244	70-133			QM-2
6:2FTS	450	9.5	"	381.53	U	118	58-143			
8:2FTS	520	9.6	"	385.54	U	135	66-126			QM-2
FOSA	415	10	"	401.61	U	103	61-138			
HFPO-DA	384	20	"	401.61	U	95.5	45-129			
N-EtFOSAA	537	10	"	401.61	U	134	50-168			
N-MeFOSAA	489	10	"	401.61	U	122	47-169			
PFBA	433	20	"	401.61	15.5	104	60-141			
PFBS	433	8.9	"	355.42	30.6	113	62-135			
PFDA	479	10	"	401.61	U	119	53-156			
PFDoA	460	10	"	401.61	U	115	30-172			
PFDS	407	9.7	"	387.55	U	105	44-151			
PFHpA	447	10	"	401.61	13.8	108	75-122			
PFHpS	422	19	"	381.53	U	111	66-132			
PFHxA	480	20	"	401.61	19.1	115	64-138			
PFHxS	397	9.1	"	366.26	U	108	72-124			
PFNA	499	10	"	401.61	45.1	113	72-129			
PFNS	394	9.6	"	385.54	U	102	61-126			
PFOA	465	10	"	401.61	19.3	111	74-127			
PFOS	473	9.3	"	371.69	55.7	112	68-132			
PFPeA	465	10	"	401.61	27.3	109	75-122			
PFPeS	416	9.4	"	377.51	U	110	72-122			
PFTeDA	494	20	"	401.61	U	123	10-194			



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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2304003 - S PFC

Matrix Spike (2304003-MS1)	Source: E231202-07RE1		Prepared: 04/05/23		Analyzed: 04/06/23					
PFTrDA	448	10	ng/L	401.61	U	111	10-193			
PFUdA	466	10	"	401.61	U	116	44-164			

Matrix Spike Dup (2304003-MSD1)	Source: E231202-07RE1		Prepared: 04/05/23		Analyzed: 04/06/23	
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ASTM D7979-19

4:2FTS	915	9.4	ng/L	374.00	U	245	70-133	0.198	34	QM-2
6:2FTS	476	9.5	"	380.00	U	125	58-143	5.54	45	
8:2FTS	564	9.6	"	384.00	U	147	66-126	8.23	56	QM-2
FOSA	435	10	"	400.00	U	109	61-138	4.78	39	
HFPO-DA	388	20	"	400.00	U	97.0	45-129	1.12	57	
N-EtFOSAA	561	10	"	400.00	U	140	50-168	4.36	53	
N-MeFOSAA	478	10	"	400.00	U	119	47-169	2.41	65	
PFBA	439	20	"	400.00	15.5	106	60-141	1.42	37	
PFBS	427	8.8	"	354.00	30.6	112	62-135	1.28	32	
PFDA	483	10	"	400.00	U	121	53-156	0.885	57	
PFDoA	482	10	"	400.00	U	121	30-172	4.62	56	
PFDS	421	9.6	"	386.00	U	109	44-151	3.26	66	
PFHpA	463	10	"	400.00	13.8	112	75-122	3.48	26	
PFHpS	424	19	"	380.00	U	111	66-132	0.405	28	
PFHxA	481	20	"	400.00	19.1	116	64-138	0.353	42	
PFHxS	429	9.1	"	364.80	U	117	72-124	7.62	32	
PFNA	511	10	"	400.00	45.1	117	72-129	2.51	31	
PFNS	400	9.6	"	384.00	U	104	61-126	1.67	35	
PFOA	465	10	"	400.00	19.3	111	74-127	0.0333	32	
PFOS	473	9.3	"	370.20	55.7	113	68-132	0.0322	37	
PFPeA	463	10	"	400.00	27.3	109	75-122	0.433	27	
PFPeS	398	9.4	"	376.00	U	106	72-122	4.60	29	
PFTeDA	571	20	"	400.00	U	143	10-194	14.4	111	
PFTrDA	488	10	"	400.00	U	122	10-193	8.69	106	
PFUdA	476	10	"	400.00	U	119	44-164	2.19	48	



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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2304003 - S PFC

MRL Verification (2304003-PS1)

Prepared: 04/05/23 Analyzed: 04/06/23

ASTM D7979-19

4:2FTS	8.75	9.4	ng/L	9.3500		93.6	47.1-145			MRL-2
6:2FTS	5.14	9.5	"	9.5000		54.1	29.2-154			MRL-2
8:2FTS	8.65	9.6	"	9.6000		90.2	36.4-156			MRL-2
FOSA	9.47	10	"	10.000		94.7	37.7-168			MRL-2
N-EtFOSAA	9.31	10	"	10.000		93.1	27.2-205			MRL-2
N-MeFOSAA	7.96	10	"	10.000		79.6	23.2-198			MRL-2
PFBS	9.07	8.8	"	8.8500		102	48.2-138			MRL-2
PFDA	9.02	10	"	10.000		90.2	27.4-182			MRL-2
PFD _o A	8.39	10	"	10.000		83.9	36.5-175			MRL-2
PFDS	9.98	9.6	"	9.6500		103	15.1-188			MRL-2
PFHpA	11.3	10	"	10.000		113	52.8-136			MRL-2
PFHxS	10.0	9.1	"	9.1200		110	49.5-138			MRL-2
PFNA	8.48	10	"	10.000		84.8	44.1-148			MRL-2
PFNS	9.82	9.6	"	9.6000		102	43.3-146			MRL-2
PFOA	11.0	10	"	10.000		110	46.7-142			MRL-2
PFOS	12.7	9.3	"	9.2550		137	50.4-142			MRL-2
PFPeA	12.1	10	"	10.000		121	52-135			MRL-2
PFPeS	9.38	9.4	"	9.4000		99.8	49-137			MRL-2
PFT _r DA	10.7	10	"	10.000		107	12.2-235			MRL-2
PFUdA	8.79	10	"	10.000		87.9	45.8-162			MRL-2

MRL Verification (2304003-PS2)

Prepared: 04/05/23 Analyzed: 04/06/23

ASTM D7979-19

HFPO-DA	24.1	20	ng/L	20.000		121	31.3-147			MRL-2
PFBA	20.4	20	"	20.000		102	47.9-138			MRL-2
PFHpS	22.0	19	"	19.000		116	39.7-150			MRL-2
PFHxA	19.9	20	"	20.000		99.7	42.6-147			MRL-2
PFT _e DA	18.4	20	"	20.000		92.1	22.9-199			MRL-2



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Notes and Definitions for QC Samples

- U The analyte was not detected at or above the reporting limit.
- MRL-2 MRL verification for Non-Potable Water matrix
- QL-2 Laboratory Control Spike Recovery greater than method control limits
- QM-2 Matrix Spike Recovery greater than method control limits

End of Report